

AD-A097 868

ARMY PROCUREMENT RESEARCH OFFICE FORT LEE VA
ACQUISITION STRATEGY DEVELOPMENT.(U)

F/G 15/5

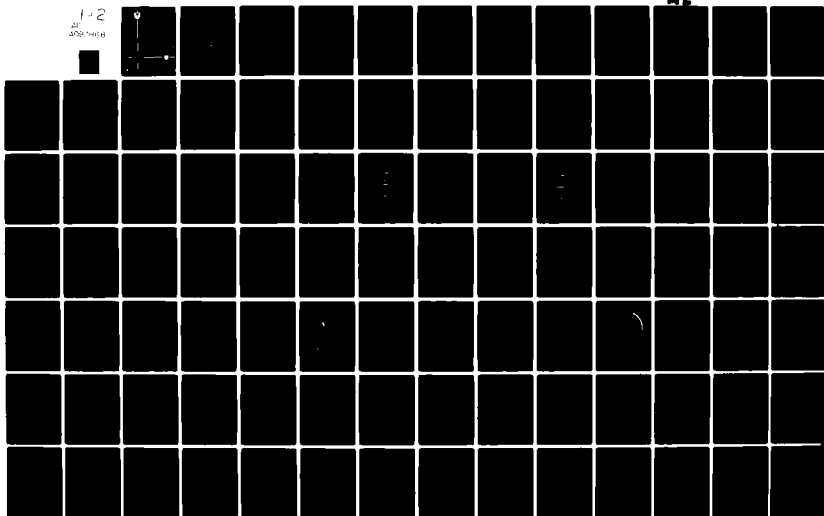
FEB 81 D D KNITTLE, R F WILLIAMS

UNCLASSIFIED

APRO-904

1-2
20
APR-1988

NL





LEVEL

5
SC

APRO 904
FINAL

AD A 097868

ACQUISITION STRATEGY
DEVELOPMENT

FEBRUARY 1981

SELECTED
APR 17 1981

A

Approved for Public Release; Distribution Unlimited



ARMY PROCUREMENT RESEARCH OFFICE

U.S. ARMY LOGISTICS MANAGEMENT CENTER
FORT LEE, VIRGINIA 23801

81 4 17 075

FILE

14 APR 904

9 FINAL rpt

6 ACQUISITION STRATEGY DEVELOPMENT

by

10 Duane D. Knittle
Robert F. Williams

11 Feb 1981

12 112

The pronouns "he," "his," and "him," when used in this publication, represent both the masculine and feminine genders unless otherwise specifically stated.

Information and data contained in this document are based on input available at time of preparation. Because the results may be subject to change, this document should not be construed to represent the official position of the US Army Materiel Development and Readiness Command.

Approved for Public Release; Distribution Unlimited

US ARMY PROCUREMENT RESEARCH OFFICE
US Army Logistics Management Center
Fort Lee, Virginia 23801

406825

EXECUTIVE SUMMARY

A. BACKGROUND AND PROBLEM STATEMENT. Top level policies task the project manager (PM) with formulating an acquisition strategy to guide his system's evolution. This strategy should be generated at the outset of the life cycle and should address the entire acquisition effort. To ensure comprehensive coverage, the PM must integrate and prioritize many functional requirements in a systematic manner. However, current Army regulations provide little guidance to PM's for developing their acquisition strategies. As a result, there is little formal discipline in the strategic planning process, which can lead to fragmented planning and failure to consider all alternative strategies.

B. OBJECTIVES. The objectives of this study are to (i) develop definitions for key terms; (ii) describe the major system acquisition process in a systematic, understandable manner; (iii) examine the overall planning requirements for major system acquisitions, with emphasis on contract planning; (iv) recommend improvements for the Army's major system acquisition planning system; and (v) determine the applicability of these recommendations for nonmajor systems.

C. RESEARCH DESIGN. Research efforts consisted of (i) a comprehensive review of current regulations and literature on acquisition strategy development; (ii) interviews with representatives of the Department of the Army, the US Army Materiel Development and Readiness Command (DARCOM), selected Development Commands, and other services; and (iii) a review of various planning documents, including specific project acquisition plans.

D. CONCLUSIONS: (i) The acquisition cycle can best be conceptualized in the context of four management processes; (ii) current procedures place too little emphasis on early strategic planning; (iii) this results in a lack of formal discipline in acquisition strategy development; (iv) PM's need more assistance in developing acquisition strategies; and (v) the contracting function has not been given sufficient emphasis in early acquisition planning.

E. RECOMMENDATIONS. Initiate action to (i) appoint PM's at the outset of the acquisition cycle to serve as the focal point for early planning; (ii) provide PM's with more guidance on early strategy development, based on the content of this report; (iii) establish an Acquisition Strategy Panel within DARCOM to assist PM's in their planning efforts; (iv) place additional emphasis on early formulation of contracting strategies and plans; (v) concentrate contract planning on core issues, while relying on other documents for background information; and (vi) incorporate selected findings of this research into Army training programs.

TABLE OF CONTENTS

	<u>Page</u>
EXECUTIVE SUMMARY	ii
LIST OF FIGURES	vi
LIST OF TABLES	vii
<u>CHAPTER</u>	
I. INTRODUCTION	1
A. BACKGROUND AND PROBLEM STATEMENT	1
B. OBJECTIVES	3
C. SCOPE	4
D. DEFINITIONS AND CONVENTIONS	5
E. REPORT RATIONALE	9
1. Report Theory	9
2. Research Design	10
3. Report Organization	12
II. THE ACQUISITION PROCESS	14
A. GENERAL CONSIDERATIONS	14
1. Organizations and Individuals	14
2. Regulatory and Policy Guidance	18
B. MANAGEMENT OF THE ACQUISITION CYCLE	18
1. The Cycle Itself	21
2. The Executive Approval Process	24
3. The Fiscal Approval Process	27
4. The Contracting Cycle	32

	<u>Page</u>
III. ACQUISITION PLANNING REQUIREMENTS	40
A. PURPOSE AND DESIGN OF CHAPTER	40
1. Purpose	40
2. Design	41
B. ACQUISITION PLANNING	42
1. Introduction	42
2. As the System Should Operate	42
3. As the Army System Presently Operates	43
4. As the Army System Might Be Improved	45
C. EXECUTIVE APPROVAL PLANNING	49
D. FISCAL APPROVAL PLANNING	50
1. Introduction	50
2. The Planning, Programing, Budgeting System	51
3. Coordination of Fiscal and Executive Approval Planning	55
4. Interfacing with the PPBS in the Later Phases of the Acquisition Cycle	60
E. CONTRACT PLANNING	62
1. Introduction	62
2. As the System Should Operate	62
3. As the Army System Presently Operates	64
4. As the Army System Might be Improved	66
F. PLANNING FOR OTHER MANAGEMENT REVIEWS	67
G. DISRUPTIVE INFLUENCES	69
H. UPDATES AND REVISIONS	70
1. Acquisition Planning Updates	71

	<u>Page</u>
2. Executive Approval Planning Updates	72
3. Fiscal Approval Planning Updates	72
4. Contract Planning Updates	72
5. Methodology	73
6. Revisions	74
IV. CONCLUSIONS AND RECOMMENDATIONS	75
A. INTRODUCTION	75
B. CONCLUSIONS.	75
1. General Conclusions	75
2. Specific Conclusions	78
C. RECOMMENDATIONS	80
1. General Recommendations	80
2. Specific Recommendations	82
3. Recommendations for Further Study	98
SELECTED BIBLIOGRAPHY	100
STUDY TEAM COMPOSITION	102

LIST OF FIGURES

<u>Figure</u>	<u>Page</u>
1. THE BASIC ACQUISITION CYCLE	22
2. THE EXECUTIVE APPROVAL PROCESS IN THE ACQUISITION CYCLE	25
3. THE FISCAL APPROVAL PROCESS IN THE ACQUISITION CYCLE	28
4. THE CONTRACTING ROLE IN THE ACQUISITION CYCLE	33
5. THE PRESENT ARMY PLANNING SYSTEM	46
6. THE PROPOSED ARMY PLANNING SYSTEM	48
7. PLANNING, PROGRAMING, BUDGETING SYSTEM	52
8. INTERFACE OF THE PLANNING, PROGRAMING, BUDGETING AND MATERIEL ACQUISITION DECISION PROCESSES	57
9. ACQUISITION STRATEGY PANEL	83
10. INTEGRATED PROGRAM SUMMARY AS COMPARED TO DAR 1-2100	96

LIST OF TABLES

<u>Table</u>	<u>Page</u>
1. MAJOR ACQUISITION POLICIES	19
2. ASP CONTRIBUTORS	86
3. RECOMMENDED CONTRACTING PLAN COVERAGE	97

CHAPTER I

INTRODUCTION

A. BACKGROUND AND PROBLEM STATEMENT.

One of the chief initiatives embodied in recent policy guidance issued by the Office of Management and Budget and the Department of Defense is to stress the importance of comprehensive planning during the early stages of a major system acquisition. The purpose of such planning is to provide direction to the overall acquisition effort. Toward this end, acquisition planning must encompass many diverse functional requirements (e.g., technical alternatives, logistics and testing). Planning must integrate--and if necessary prioritize--these requirements in order to formulate a coordinated approach to system development. In addition to the acquisition effort itself, planning must accommodate the requirements of the various management processes which control the cycle. Finally, these efforts must ultimately be translated into definitive requirements which can be relayed to industry through the contractual interface. It can be seen that this is a complex process of formulation, integration and documentation. Adequate attention to this early planning can help to preclude unanticipated problems in subsequent phases of the acquisition cycle.

Many individuals and organizations contribute to the planning efforts in their own areas of expertise. Nevertheless, two individuals play particularly prominent roles in the acquisition planning process. The project manager (PM) is chartered with the overall responsibility for management of the system. He must similarly assume responsibility for orchestrating the overall planning effort. The second key individual is the contracting

NL

officer who supports the PM. The contracting officer essentially serves as the business manager for the program by virtue of his responsibility for establishing and maintaining the formal contractual relationship with industry. In view of the fact that all requirements of the acquisition effort must ultimately be reflected in a fully integrated contractual agreement, the contracting officer must play an active role in the synthesis of these requirements. He must also plan a contractual approach to be employed throughout the acquisition cycle which will ensure these requirements are met.¹

Failure to actively pursue such planning efforts can impede attainment of program objectives. That is, inadequate planning at the outset can lead to a mode of "crisis management" during subsequent phases of the acquisition cycle as unanticipated problems arise. Further, failure to systematically analyze and integrate all planning parameters can result in functional discord at a time when certain options to reconcile competing objectives have been foreclosed. Finally, insufficient attention to planning a comprehensive contracting approach may give rise to poor business arrangements.

Despite the importance of planning for a major system acquisition, there is little definitive guidance within DARCOM as to how this task should be accomplished. While top level policy guidance stresses the need for systematic planning at the outset of a development effort, Army implementing

¹ In this context, the term "contracting officer" is used as a generic term to encompass all individuals within the contracting function who contribute to the planning effort, either in the formulation or review and approval process.

regulations concentrate primarily on the formulation of definitive plans during subsequent phases of the cycle. In short, there is little emphasis on strategic planning during the inceptive stages when the establishment of a "road map" for system development would be most beneficial. This problem is compounded by the fact that there is no focal point for planning during this critical inceptive phase, due to the fact that the PM is not normally appointed at that time.

B. OBJECTIVES.

One problem associated with acquisition planning is the inconsistent use of terminology in that regard. Consequently, the first objective of this study was to establish standard definitions and conventions for applying certain key terms and phrases associated with the planning process.

A second objective was to describe the acquisition cycle for major systems in an understandable fashion. System acquisitions are by their nature complex undertakings. A system level overview of the basic acquisition cycle, together with the management disciplines which control the process, was considered essential to frame the planning environment.

Having thus described the acquisition process, the third objective of this research was to examine the planning implications inherent in the process, to include:

1. The various strategies and plans which must be generated;
2. The functional areas which they must encompass;
3. The methods which are employed to integrate such functional requirements;
4. The key contributors to these planning efforts;

5. The review processes to which the resultant strategies and plans are subjected; and

6. The procedures employed to update and revise such strategies and plans during the course of the acquisition cycle.

Based on this analysis, the fourth and fifth objectives were to make recommendations to improve the planning process for major system acquisitions, and to analyze the applicability of these improvements to nonmajor system developments.

C. SCOPE.

The overall acquisition planning process was reviewed at the system level. Beyond this, certain selected planning activities were reviewed in detail with the aim of suggesting substantive improvements. This group included acquisition strategy development, per se, and contract planning. A second set of planning activities was also reviewed in detail, but with the more limited objective of increasing appreciation and accommodation of their requirements in relation to system development. This effort included analyzing the planning implications of the executive and fiscal approval processes. Finally, a third set of planning activities was addressed only in passing, due to their functionally specialized nature. For example, the expertise of the researchers did not allow for a qualitative review of the development of a test strategy.

It should be emphasized that this research was directed at improving acquisition planning within the Department of the Army. In order to provide full coverage of the subject matter, it was necessary to analyze the role of the Office of Management and Budget and the Department of Defense in shaping Army policies. Other services were also contacted to

investigate promising techniques which they might employ. However, efforts were concentrated on Army procedures. Further, in view of the fact that DARCOM is the Army's primary materiel developer, only systems under the cognizance of DARCOM Development Commands were selected for review. These reviews were not in-depth case studies, but rather attempts to gain insights as to common problems encountered by field personnel executing their planning responsibilities. Finally, the study concentrated on new development acquisitions. While it is recognized that an acquisition strategy must be developed for any alternative acquisition method (e.g., product improvement of current standard equipment), planning associated with new developments is generally more extensive and complex than planning for other methods of need satisfaction. Consequently, the establishment of an acquisition strategy to serve as a baseline for subsequent detailed planning assumes a particularly critical role in the case of a new development. Viewed in this light, analyzing acquisition strategies for new development efforts was felt to be the most promising area for recommending improvements to the Army's current planning system.

D. DEFINITIONS AND CONVENTIONS.

One problem facing the acquisition community is the absence of a commonly accepted set of definitions and conventions for the use of certain terms.

For example, Public Law 96-83, "The Office of Federal Procurement Policy Act Amendments of 1979," defines "procurement" as including all stages of the acquisition process, beginning with the process for determining a need for property and services through to the Federal Government's disposition of such property and services. In short, the statute addresses acquisition as a subelement in its overall definition of procurement. This should be

compared to Department of Defense Directive 5000.35 entitled "Defense Acquisition Regulatory System." That document defines acquisition as any relationship entered into to acquire property or services for the direct benefit of the Department of Defense to include the management and business functions and disciplines involved in establishing and continuing the relationship. This usage is not necessarily contradictory. However, the Directive goes on to state that the term "procurement" shall not be used to identify functions of the Department of Defense to acquire property and services except as relates to the budgetary process.

In another example, both Draft Army Regulation 70-1 (Draft AR 70-1) and Section 1-2100 of the Defense Acquisition Regulation (DAR) refer to "acquisition plans." However, they are applying this term to separate and distinct documents. The DAR "acquisition plan" is, in fact, a subelement of the Draft AR's "acquisition plan." This inconsistency alone is causing considerable confusion. While it is understood that the terminology in Draft AR 70-1 may be changed to "Program Management Plan" in its final version, as of this writing the inconsistency in usage is still present.

In attempting to clarify this situation, it is first necessary to draw a distinction between the terms "procurement" and "acquisition." This paper accepts the convention of Public Law 96-83, whereby "procurement" is a very broad subject encompassing not only "acquisition" but also such related areas as grants, supply and property disposal. As the scope of this report covers only the acquisition aspects of procurement as defined above, the remainder of the study will contain no reference to "procurement" in its overall context.

Having drawn this distinction, it is then necessary to discuss the term "acquisition." For purposes of this paper, ACQUISITION is defined as all activities associated with the process of identifying and justifying a mission need, formulating an acquisition strategy to meet this need, and implementing this strategy by means of a contractual relationship (or series of relationships) with the private sector. Within the Army, there are four basic acquisition methods. They are: Product improvement of current standard equipment; purchasing nondevelopmental equipment; modification of commercially available items; or initiation of a new materiel development program.² In the case of new developments--the primary focus of this study--there are four basic phases in the acquisition cycle: exploration of alternative system concepts, demonstration and validation of selected concepts, full scale engineering development, and production and deployment. These phases of the acquisition cycle will be discussed in Chapter II of this report. Their inclusion here is intended to establish the boundaries for the term "acquisition." That is, for purposes of this paper acquisition does not encompass activities preceding the identification of a mission need, nor does it include activities subsequent to initial production and deployment.

The next step in the definitional process is to examine the proper use of the terms "planning," "strategy" and "plan" in the acquisition process. In this regard, a review of Office of Management and Budget Circular A-109 (OMB A-109), Department of Defense Instruction 5000.2 (DODI 5000.2), and

²
Army Regulation 1000-1, paragraph 2-2.

Army Regulation 1000-1 (AR 1000-1) has led to adoption of the following conventions:

ACQUISITION PLANNING is the continuous process of analyzing technical, business and management aspects of the developing system. The planning process first leads to the generation of a comprehensive acquisition strategy.

The ACQUISITION STRATEGY reflects the broad concepts which will direct and control the overall development effort. It addresses the entire acquisition cycle with appropriate emphasis on near term activities. The strategy is not static, but dynamic. It continues to evolve in parallel with the system's development, becoming more refined as additional information comes to light. At each stage of its evolution this strategy serves as the conceptual basis for formulating detailed acquisition plans.

The ACQUISITION PLAN builds upon the strategy to formally document definitive actions which must be accomplished at various phases of the acquisition cycle. It is specific with regard to near term objectives, and reflects the points in time when longer term objectives must be definitized. In short, it constitutes the plan for implementation of the acquisition strategy.

Finally, as noted in the first paragraph of this section, one of the most bothersome inconsistencies in terminology results from the dual use of the title "acquisition plan." As noted above, this study has adopted the convention of using "acquisition plan" in a very broad sense, encompassing all activities associated with system development. This parallels the orientation reflected in Draft AR 70-1. The question thus arises as to the proper title for the "acquisition plan" called for under DAR 1-2100. For purposes of this report, this document is referred to as a CONTRACTING PLAN. As will be seen in succeeding chapters, this convention is substantive as well as definitional. That is, a conclusion of this study is

that the DAR "acquisition plan," as presently structured, contains a great deal of material which is duplicative of other documents. Utilizing one of these other documents to provide much of the background information currently prescribed by the DAR "acquisition plan" will allow the contracting officer to concentrate on the issues central to planning the contractual interface. In short, the DAR "acquisition plan" will become a true "contracting plan" if the recommendations of this study are adopted.

The definitions and conventions set forth above are considered to be consistent with current regulatory guidance. However, as evidenced by the introductory paragraph of this section, there is still considerable debate within the acquisition community in this regard. It should, therefore, be noted that the adoption of alternative conventions will not detract from the substance of this paper. Every effort has been made to concentrate on system level improvements which are not overly sensitive to changes in terminology usage.

E. REPORT RATIONALE.

1. Report Theory.

In order to fully cover the subject of acquisition strategy development, this report must encompass a rather broad array of planning processes. If the recommendations set forth in Chapter IV are adopted, many functional elements at various organizational levels will be affected to some degree. It follows that the report must be addressed to a broad, multi-disciplinary audience. Consequently, certain principles were adopted in this writing to assure readability by that audience. First, a system level approach was employed, rather than a concentration in any one area. While contracting receives more attention than some other processes, every effort

has been made to assure broad coverage. Second, the report is couched in generic management terms, rather than specialized terminology and Government acronyms, wherever possible. This parallels the conceptual nature of the study. Third, brevity has been stressed. And finally, ease of implementation has guided the considerations and selection of alternative possibilities for improvement.

As a final note on report theory, an approach has been employed whereby a baseline is established as to how the system should operate, based largely on the analysis of top level policy guidance. The present Army planning system is compared to this baseline. Alternative approaches are then offered to effect substantive improvements and to align the Army's planning system more closely with top level policies. Certain areas lent themselves more readily to this approach than others. It has nevertheless been attempted to use this format throughout the report to the degree possible.

2. Research Design.

Research began with a thorough review of recent literature on acquisition planning. Regulatory and policy guidance issued by the Office of Management and Budget, the Department of Defense, and various Army, Navy and Air Force organizations were then examined. This phase of the research provided insights as to the top level policies related to acquisition planning. It also revealed how the present Army planning system is designed to operate. Any inconsistencies among the various documents were noted.

Having researched the documentary guidance, it was considered important to obtain a broad spectrum of views from individuals who

contribute to the Army planning effort. On the Department of the Army (DA) staff, interviews were conducted with representatives of the Deputy Chief of Staff for Research, Development, and Acquisition (DCSRDA) and the Deputy Chief of Staff for Operations and Plans (DCSOPS). Within DARCOM, discussions were held with individuals from the Directorate for Procurement and Production, the Directorate for Development and Engineering, and the Office of Project Management. Field visits were made to obtain the views of project management office and contracting personnel from selected development commands.³ In connection with these interviews, specific project planning documents were also reviewed. These included Acquisition Plans (Draft AR 70-1), Contracting Plans (DAR 1-2100), and one Integrated Program Summary (DODI 5000.2). Finally talks were held with representatives of the Air Force Systems Command and the Naval Material Command to investigate acquisition planning procedures employed by those organizations.

On the basis of these research efforts, a model of the overall acquisition process was constructed. As the purpose of this model is to serve as a vehicle for understanding the planning implications of system acquisitions, it is somewhat simplified when compared to some presentations of the process. Major planning requirements were then analyzed in the context of this model, including the roles played by various functional

3

These commands included the US Army Aviation Research and Development Command; US Army Communications Research and Development Command; US Army Missile Command; US Army Tank Automotive Command. Selection of specific systems for review was guided by information assembled by the Army Procurement Research Office in support of the Army Acquisition Task Force under the authority of the Assistant Secretary of the Army for Research, Development and Acquisition.

elements in fulfilling these requirements. Based on this analysis, areas needing improvement were identified, and selective recommendations to effect these improvements were formulated. As previously noted, while some of these recommendations are substantive, others are more educational in nature.

3. Report Organization.

This chapter of the report is important as an avenue for framing the substantive chapters which follow. This is particularly true in the definitional area, which must be assimilated by the reader in order to provide the proper orientation for the ensuing chapters.

Chapter II presents a graphic model of the acquisition process, reflecting the basic four phase cycle for new developments. Management controls imposed on the development cycle by the executive and fiscal approval processes are depicted. Finally, the role of contracting in system acquisition is portrayed. For ease of reference, a series of figures is included to illustrate the evolving complexity of the major system acquisition process.

Chapter III analyzes the planning requirements inherent in this model. It includes the planning efforts applicable to the development effort itself, those necessary to prepare for the executive review points, those required for fiscal approval, and those which must be accomplished prior to contractual action. The interfaces among the resultant strategies and plans are then discussed. Areas indicating a need for improvement are identified; however, no specific recommendations are included in this chapter.

Chapter IV sets forth the conclusions of the analysts, and presents recommendations to improve the shortcomings of the present process. These

recommendations are presented in parallel with the planning processes identified in Chapter III. Suggested implementation procedures are included for each substantive recommendation.

One final comment on the content and organization of the report is in order. The content of Chapters II and III are drawn heavily from regulatory and policy issuances. To have footnoted each paraphrase of these documents would have detracted from the study's readability. Therefore, while references to source documents are included, it was determined to forego extensive notations of paragraphs within these documents. Specific citations will, of course, be furnished upon request.

CHAPTER II

THE ACQUISITION PROCESS

A. GENERAL CONSIDERATIONS.

The purpose of this chapter is to acquaint the reader with the overall process of acquiring major systems within the Army. Introductory paragraphs will identify responsible organizations and individuals that participate in this process. A table is included to display the major regulatory and policy issuances which deal directly with major system acquisitions. Succeeding sections will then explore the acquisition cycle itself, and the various management disciplines which control the development process.

1. Organizations and Individuals.

Any analysis of organizational influence on the system acquisition process must begin with the Congress of the United States. Congress exercises its authority in two primary ways. First, it is very active in the fiscal approval process by virtue of its general authority to control the appropriation and expenditure of funds. Second, Congress relies on this general authority to enact statutes which direct the contracting aspects of the acquisition cycle.

A second major contributor to the formulation of acquisition policies is the Office of Management and Budget (OMB). The OMB is empowered to issue policy guidance to all executive branch agencies. It is also instrumental in the fiscal approval process. Within OMB the Office of Federal Procurement Policy exercises broad authority in issuing policies which guide the contractual aspects of the acquisition cycle.

The next level of authority rests with the Department of Defense (DOD). The most important figure within DOD is the Secretary of Defense himself, who is ultimately responsible for executive approval to proceed to the next phase of the development. He may delegate this authority in the case of nonmajor systems, but he will be the focal point for executive approval for purposes of this writing. The Secretary is assisted in this decision process by a Defense Acquisition Executive (DAE) who coordinates a multi-disciplinary body entitled the Defense Systems Acquisition Review Council (DSARC). The primary function of the DSARC is to serve as the executive advisory group for the Secretary in his deliberations on major system acquisitions.

The Secretary of the Army serves as the executive approval authority for systems not retained by the Secretary of Defense.⁴ The Secretary has designated the Assistant Secretary of the Army for Research, Development and Acquisition (ASA(RDA)) as the Army Acquisition Executive, with overall authority for management of the Army's development efforts. The ASA(RDA) also has review authority for contractual planning. As the military counterpart of the ASA(RDA), the Deputy Chief of Staff for Research, Development and Acquisition (DCSRDA) has Army General Staff responsibility for the acquisition process. Important duties of the DCSRDA include staff responsibility for development of acquisition strategies and formulation of budgetary submissions. The DCSRDA is also tasked with coordination of the Army Systems Acquisition Review Council--the Army equivalent of the DSARC. A key

⁴ This authority may be redelegated to lower echelons at the Secretary's discretion.

individual on the DCSRDA staff is the Department of the Army System Coordinator (DASC) assigned to each system. The DASC essentially serves as the project manager's counterpart on the Army staff. He is particularly active in preparations for both the executive and fiscal review processes. One other staff element which deserves attention is the Deputy Chief of Staff for Operations and Plans (DCSOPS). In his capacity as chief spokesman for strategic concepts and broad force requirements, the DCSOPS is most influential in requirements determination and prioritization. He is the primary user representative on the Army staff.

The US Army Materiel Development and Readiness Command (DARCOM) is the Army's primary materiel developer. As such, it is responsible for issuing Command policy to direct the various acquisition programs being carried out by its Development Commands. Within DARCOM the Deputy Commanding General for Materiel Development (DCGMD) has overall responsibility for managing the research, development, engineering, test and evaluation, and initial acquisition activities. His duties also include supervising the preparation of appropriate budgetary submissions during the fiscal approval process. Under the DCGMD, the Directorate for Development and Engineering is the chief proponent for materiel acquisition policies. Finally, the Directorate for Procurement and Production issues policies and reviews documentation relating to the contracting function.

The Project Manager (PM) is the chief line official for planning and executing all activities associated with the development and acquisition of a major system. He is the focal point for system acquisition, and is typically supported by various internal staff elements. Chief among the PM's support personnel is the Deputy Project Manager who can play a

critical role in maintaining project continuity during PM transitions. Another key element is the program management division within the PM's organization. This group is particularly active in the fiscal approval process. Finally, the PM normally has an internal procurement analysis capability. This element can play an important role in establishing a good working relationship with the contracting officer, who is normally attached to the functional directorate of the Development Command.⁵ Even the largest PM office must rely on the cognizant Development Command for some degree of functional support. The extent of PM reliance varies, and no attempt will be made to catalogue the types of support which may be required. However, one organizational interdependency deserves some attention. The PM must almost always rely on the Development Command for contracting support. The early establishment and careful maintenance of a good working relationship between the PM and his contracting officer can be a key ingredient for project success. This point will be developed in succeeding sections of this report.

In order to complete the analysis of key participants in the system acquisition process, some attention must be given to the US Army Training and Doctrine Command (TRADOC). TRADOC is the primary user representative in the acquisition cycle and is responsible for preparing requirements documents at each cycle phase. In performing these roles, TRADOC works closely with DCSOPS at the DA level. Within TRADOC, the focal point for

⁵

While some systems retain their project managed status subsequent to transitioning to a Readiness Command, they will not be discussed in this report due to the fact that its scope only covers the development effort through initial production.

user interests in a given development effort is the TRADOC System Manager (TSM). TSM's are chartered for selected major and nonmajor systems at approximately the same time that the DARCOM PM is appointed. The TSM then assumes the responsibility for managing all facets of user inputs and user actions throughout the acquisition cycle.

It is not possible to discuss all of the organizations and individuals which participate in the acquisition process in this section. Those elements discussed above play central roles in the process; however, it will be necessary to allude to other contributors at appropriate points in this report. Sufficient detail will be presented at those points to describe their influences on system development.

2. Regulatory and Policy Guidance.

Just as it was difficult to address every participant in the acquisition process, it is equally difficult to catalogue every regulatory or policy issuance which influences the process in some manner. For purposes of this writing, only those documents which are central to the acquisition of major systems will be included for reference purposes. These policy statements are displayed opposite their proponent organizations in Table 1. For a more comprehensive listing of DOD issuances, the reader's attention is invited to the first enclosures to DODD 5000.1 and DODI 5000.2 respectively. Additional Army regulations are set forth in Appendix B to Draft AR 70-1.

B. MANAGEMENT OF THE ACQUISITION CYCLE.

In a totally decentralized environment a PM's charter might only reflect a mission need, a certification of funding availability, and a required completion date for the development effort. He would then have total

TABLE 1
MAJOR ACQUISITION POLICIES

PROPONENT ORGANIZATION	POLICY ISSUANCE
Office of Management and Budget	OMB Circular No. A-109, "Major System Acquisitions"
Office of Federal Procurement Policy	OFPP Pamphlet No. 1, "Major System Acquisitions: A Discussion of OMB Circular No. A-109"
Department of Defense	DODD 5000.1, "Major System Acquisitions" DODI 5000.2, "Major System Acquisition Procedures" DODD 5000.35, "Defense Acquisition Regulatory System" Defense Acquisition Regulation
Department of the Army	AR 1000-1, "Basic Policies for Systems Acquisition" AR 15-14, "System Acquisition Review Council Procedures" Draft AR 70-1, "Army Research, Development and Acquisition" Draft AR 71-9, "Force Development, Material Objectives and Requirements" AR 1-1, "Planning, Programing and Budgeting Within The Department Of The Army" AR 70-6, "Managemer. of the Army Research, Development, Test and Evaluation Appropriation" "PPBS Handbook" Army Defense Acquisition Regulation Supplement
US Army Materiel Development and Readiness Command	DARCOM-R 10-2, "Organization and Functions" "Joint DARCOM/TRADOC Materiel Acquisition Handbook" "Materiel Acquisition Management Guide" Miscellaneous Procurement Instructions

latitude to develop a system to fulfill the need within the resource and time constraints reflected in his charter. However, within DOD and DA the PM's latitude is constrained by a series of centralized management controls. The cycle is first divided into four basic phases, and executive approval points are established to control the system's progress into each succeeding phase. An elaborate system of fiscal approval requirements is then superimposed at yearly increments throughout the cycle. Finally, the authority to contract with industry for the actual development effort is also controlled by various management reviews. It can be seen that each aspect of this control process places special requirements on the PM and his support personnel.

This section will begin with an overview of the basic four-phased acquisition cycle for developing a new major system. Succeeding parts will then discuss the management control processes which were touched on above in some detail. Particular attention is given to the inseparable role of contracting in the acquisition cycle.

It should again be noted that this report concentrates on the acquisition cycle which is applicable to new developments. While it is recognized that this is the least preferred method of satisfying a mission need, it is also the method which is most comprehensively covered by the policy issuances set forth above. More importantly, it can be viewed as a common baseline for tailoring a strategy for other acquisition methods. As a final note, it should be recognized that even if the alternative to be pursued is a new development, phases of the basic cycle can be combined or omitted if the situation warrants.

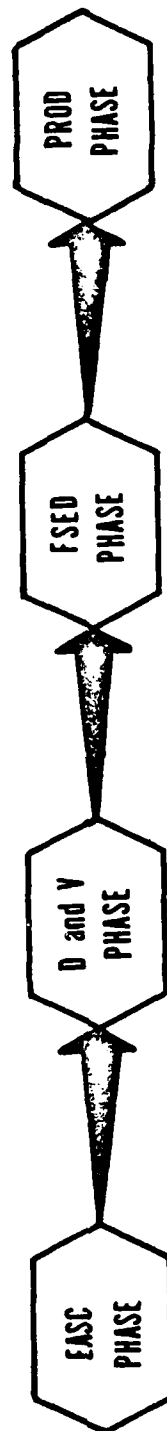
1. The Cycle Itself.

The basic acquisition cycle for new developments consists of four distinct phases, as illustrated by Figure 1 below. It is essentially a serial development process, whereby the evolving system must demonstrate satisfactory progress in one phase of the cycle prior to progressing to the next phase.

The acquisition cycle may begin with the identification of an existing or projected deficiency in the capability of the Army to perform an assigned mission. This is a result of mission analysis, which is primarily the responsibility of the Training and Doctrine Command (TRADOC). Alternatively, technological opportunities may be identified which would allow the Army to perform a given mission in a more efficient or less costly manner. This is a function of technology base management; it is primarily the responsibility of DARCOM. Once a need or opportunity is documented, the acquisition cycle begins in earnest.

The first phase of the cycle is referred to as EXPLORATION OF ALTERNATIVE SYSTEM CONCEPTS (EASC). As the name would imply, the sole purpose of the EASC phase is to explore and identify alternative concepts for satisfying a mission need. Competition is emphasized in order to select the best possible solutions from all sources--industry, educational institutions, Government laboratories, other services and/or foreign developers. Once all system concept alternatives are analyzed, the most promising candidates are selected to move forward for demonstration and validation.

The purpose of the DEMONSTRATION AND VALIDATION (D&V) PHASE is to more fully develop selected alternatives in order to determine their potential for fulfilling the mission need. This phase may involve the



THE BASIC ACQUISITION CYCLE

FIGURE 1

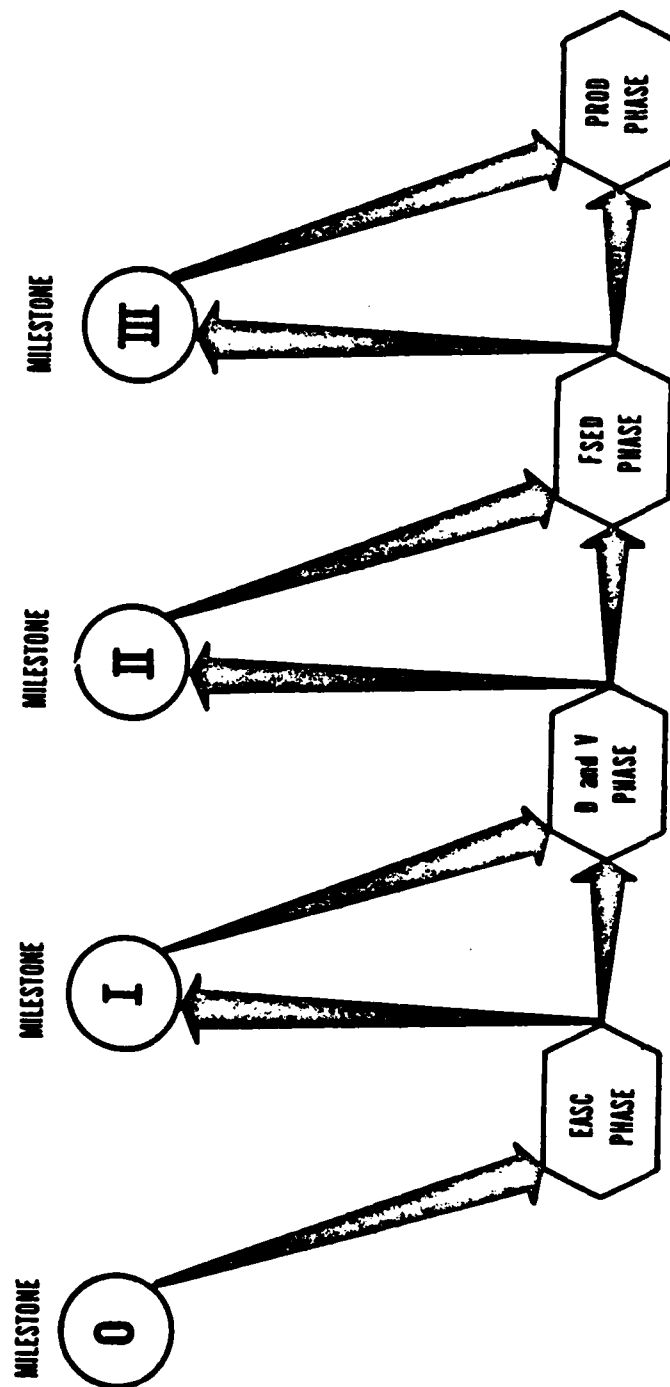
demonstration of several alternative concepts; it may be limited to a single concept; or it may involve only alternative subsystems. In selected cases, it may be omitted entirely. Upon completion of this phase a decision will be made as to which concepts have demonstrated sufficient promise to warrant continued development.

The most promising candidate, or candidates, will proceed to the FULL SCALE ENGINEERING DEVELOPMENT (FSED) PHASE. The objective of this phase is to achieve full technological maturity of the selected system concepts. It culminates in a series of development and operational tests designed to ensure that future technological risks are minimized. In order to support these testing requirements, purchase of long leadtime components or limited production of full systems may be authorized. The preferred approach is to maintain more than one competitive candidate through the FSED phase. However, this is frequently not practical due to fiscal constraints. Once the system candidates are fully developed and tested, the most favorable alternative is selected for initial production.

The selection of a system for the PRODUCTION AND DEPLOYMENT PHASE represents a commitment by the Army to field the resultant system. Subject to fiscal constraints, every effort is made to authorize a production rate which will match manufacturing efficiency with operational demand. This phase is almost inevitably performed by a single producer. Once the initial production quantity has been completed and deployed to the field, the acquisition cycle--as defined in this paper--is complete. However, it must be recognized that actions taken during all phases of the acquisition cycle can have ramifications for subsequent production buys. For example, failure to acquire technical data rights can foreclose future competitive options.

2. The Executive Approval Process.

Figure 2 introduces the executive approval process into the acquisition cycle. Prior to embarking on a major system acquisition, the need must be formally documented and submitted for review and approval at the executive level. For systems estimated to cost more than \$100 million in research and development, or \$500 million in procurement funds, the need is documented in a MISSION ELEMENT NEED STATEMENT (MENS). Preparation and coordination of the MENS is a joint DARCOM/TRADOC effort. It reflects an assessment of the need itself, an estimate of total resources required to satisfy the need, an analysis of relevant constraints, and a brief presentation of the acquisition strategy to be employed. The completed MENS is forwarded to DA for staff review. Upon completion of staffing and incorporation of necessary revisions, it is then transmitted to DOD for action. The MENS transmittal will include a recommendation as to whether the prospective system should be designated as major for executive approval purposes. Upon receipt of the MENS, the Defense Acquisition Executive (DAE) solicits comments from the DOD staff, the Office of the Joint Chiefs of Staff, other Military Departments and the Defense Intelligence Agency. He also prepares a recommendation to the Secretary of Defense as to whether to retain executive approval at his level. If he does not recommend a major system designation, the MENS is returned to DA with appropriate comments. This serves as a delegation of executive approval authority. If he does recommend a major system designation, he prepares a Secretary of Defense Decision Memorandum (SDDM) which is forwarded to the Secretary for signature. When duly executed, the SDDM serves the dual purpose of establishing



THE EXECUTIVE APPROVAL PROCESS IN THE ACQUISITION CYCLE

FIGURE 2

the executive approval level and providing that approval to proceed with the EASC phase. This constitutes the MILESTONE 0 decision.

Prior to entry into each succeeding phase of the acquisition cycle, a similar executive approval is required. These decision points are known as MILESTONES I, II and III, respectively. At these points the requests for executive approval are documented in a DECISION COORDINATING PAPER (DCP). The DCP includes a program description; a revalidation of need, goals and thresholds; a summary of the acquisition strategy; a discussion of program alternatives; and an assessment of issues affecting the decision. In view of the fact that the DCP is limited to ten pages, it is supplemented by an INTEGRATED PROGRAM SUMMARY (IPS). This is a 60-page document which summarizes the Army's acquisition planning and provides a management overview of the program. The IPS is generated by the PM and forwarded to DA for review.⁶ The executive review body within DA is the Army Systems Acquisition Review Council (ASARC), a group of top management officials which recommends appropriate action to the Secretary of the Army. If the ASARC endorses continued development of a major system, the Secretary normally recommends favorable consideration by the Secretary of Defense. At MILESTONES I, II and III the Secretary of Defense may call for advice and assistance from the Defense Systems Acquisition Review Council (DSARC) prior to reaching a final decision. This is a top level advisory body within DOD which parallels the ASARC at that level. DSARC deliberations culminate in a recommendation to the Secretary as to whether the system

⁶

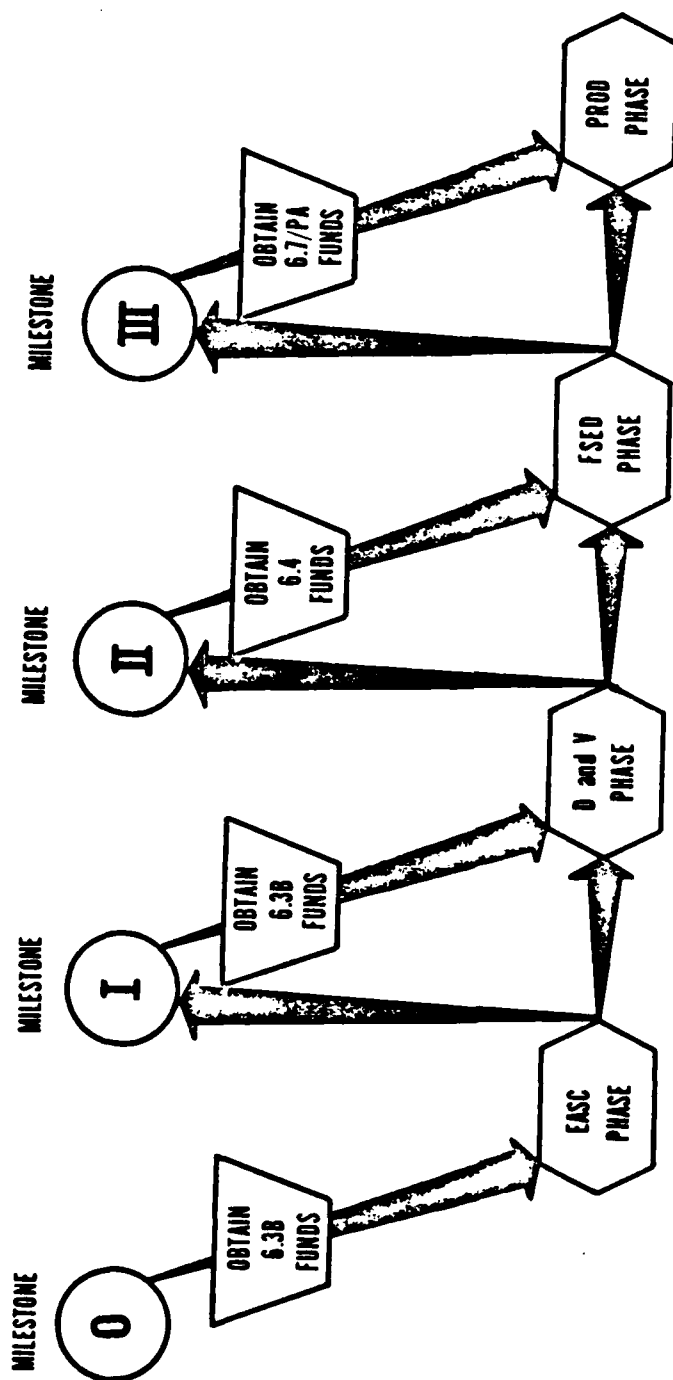
For the Milestone I decision, the DCP and IPS are generated by a Special Task Force which has responsibility for conducting the EASC phase.

should be allowed to proceed to the next phase of the cycle. This recommendation takes the form of an SDDM which is prepared for the Secretary's signature. When signed, a favorable SDDM reflects executive approval to continue the acquisition effort. This process is repeated at each ensuing MILESTONE.

3. The Fiscal Approval Process.

Executive MILESTONE approvals are based on a review of the status of one particular system and reflect the readiness of that system to progress to the next acquisition phase. Having obtained this executive endorsement, the system must compete for funds with other approved systems in the fiscal approval process. This process is illustrated by Figure 3 below. Within DOD the fiscal approval process is embodied in the Planning, Programing and Budgeting System (PPBS). Through the PPBS, the Army analyzes its future needs, develops a program to meet these needs, and proposes a funding profile to support this program. This is an extremely complex process, and it will not be possible to examine all of its facets in this writing. The process itself will be explored briefly in succeeding paragraphs, followed by a discussion of its influence on major system acquisitions. A more detailed discussion of PPBS implications for acquisition planning is reserved for Chapter III.

Planning in the PPBS context is largely carried out by the Joint Chiefs of Staff (JCS) and at the DA level. Planning activities first translate broad national objectives and policies into military objectives and strategies. These overall objectives and strategies are then tailored by the Army Staff to focus on Army missions. From this foundation, the Army develops a planned force structure and identifies the resources which



THE FISCAL APPROVAL PROCESS IN THE ACQUISITION CYCLE

FIGURE 3

will be required to perform its projected missions. For purposes of this report, PPBS planning can best be viewed as establishing the broad framework for subsequent programing and budgetary decisions.

Programing activities translate JCS and Army planning into a comprehensive and balanced allocation of projected resource needs for a five year period. Resource needs are expressed in terms of forces, manpower, materiel and funding. Within the overall program there are ten categories, one of which reflects the Army's research and development needs. This category encompasses proposed major system acquisitions. The total resource allocation (or program) is published each May as the Army Program Objectives Memorandum (POM). The POM is then submitted to the Secretary of Defense for review in light of overall defense needs. The Secretary must concern himself with competing programs of other services and allocate resources among the services accordingly. As ultimately approved by the Secretary, the POM establishes the Army's five year program for carrying out its missions. The first year of this program serves as the basis for developing annual budget estimates.

The primary function of PPBS budgeting is to obtain the funds necessary to carry out approved programs. Based on the approved POM, the budgeting phase expresses resource requirements in terms of specific manpower and funding levels. As in the case of the POM itself, proposed major system acquisitions are grouped under the research and development segment of the total budget package. The Army budget formulation phase culminates with the submission of the official Army Budget Estimate (ABE) to the Secretary of Defense. The ABE is then jointly reviewed by analysts from OMB and DOD in conjunction with similar submissions from other services.

Necessary adjustments are made, and the ABE is ultimately incorporated into the President's budget. The President's total budget proposal is submitted to Congress and reviewed in depth by that body. Proposed programs are adjusted as necessary as a result of these deliberations. Ultimately, programs are authorized and funds are appropriated to support their execution. When signed by the President, the resultant appropriations bill reflects the final Army budget for that fiscal year.⁷

Several points should be made concerning the PPBS process described above. First, the reader is again cautioned that this is an extremely simplified presentation of the system. Its only purpose is to acquaint the reader with the basic fiscal approval process. Second, this process must be carried out within rigid timeframes. The implications of this time-paced orientation as compared to the event-paced acquisition cycle will be explored in Chapter III. Third, the programing and budgeting activities of one fiscal year overlap the activities of succeeding fiscal years. That is, at a given point in time the Army may be (1) justifying its budget for fiscal year 1981 before Congress; (2) developing its budget for fiscal year 1982 on the basis of its approved POM for that year; and (3) formulating its fiscal year 1983 POM submission. Finally, decisions made regarding one fiscal year may necessitate adjustments to future year programs and budgets. The PPBS is simply not static at any point, but rather a continuous process of interrelated activities. This makes conceptualization of the system extremely difficult.

⁷ The foregoing discussion was largely drawn from the "PPBS Handbook" identified in Table 1 above.

Certain points should also be made with regard to PPBS treatment of major system acquisitions. As alluded to above, each system is separately identified in the research and development portion of program and budget submissions. This provides full visibility to decisionmakers at all levels as to the resources needed to develop the system. Assuming a certain level of funding constraints on the overall program, individual systems must compete for available funds. The visibility provided by their individual identification in program submissions facilitates prioritizing competing systems. As systems are prioritized, their funding profiles are adjusted accordingly. This may result in the total elimination of some systems and reduced funding for others. Such adjustments may occur at any level of review and may require corresponding adjustments to other aspects of the development effort (e.g., a reduced level of effort and attendant schedule slippage). If the ramifications of adverse program and budget decisions are significant enough to affect the thresholds upon which executive approval was based, that decision may have to be reconsidered.

The process is further complicated by three additional factors. First, as illustrated in Figure 3, a different type of funding (i.e., 6.3B, 6.4, 6.7 or PA) is used for each phase of the cycle. This means that residual funds from one cycle phase cannot be used for succeeding phases. Second, within each type of funding specific sums are appropriated for and allocated to individual acquisition projects. Consequently, funds which are appropriated to one project cannot normally be reallocated to other system

developments.⁸ Third, Congress has established an incremental funding requirement for major system acquisitions. This means that every system must essentially be reprioritized and rejustified through the PPBS during each year of its development.

4. The Contracting Cycle.

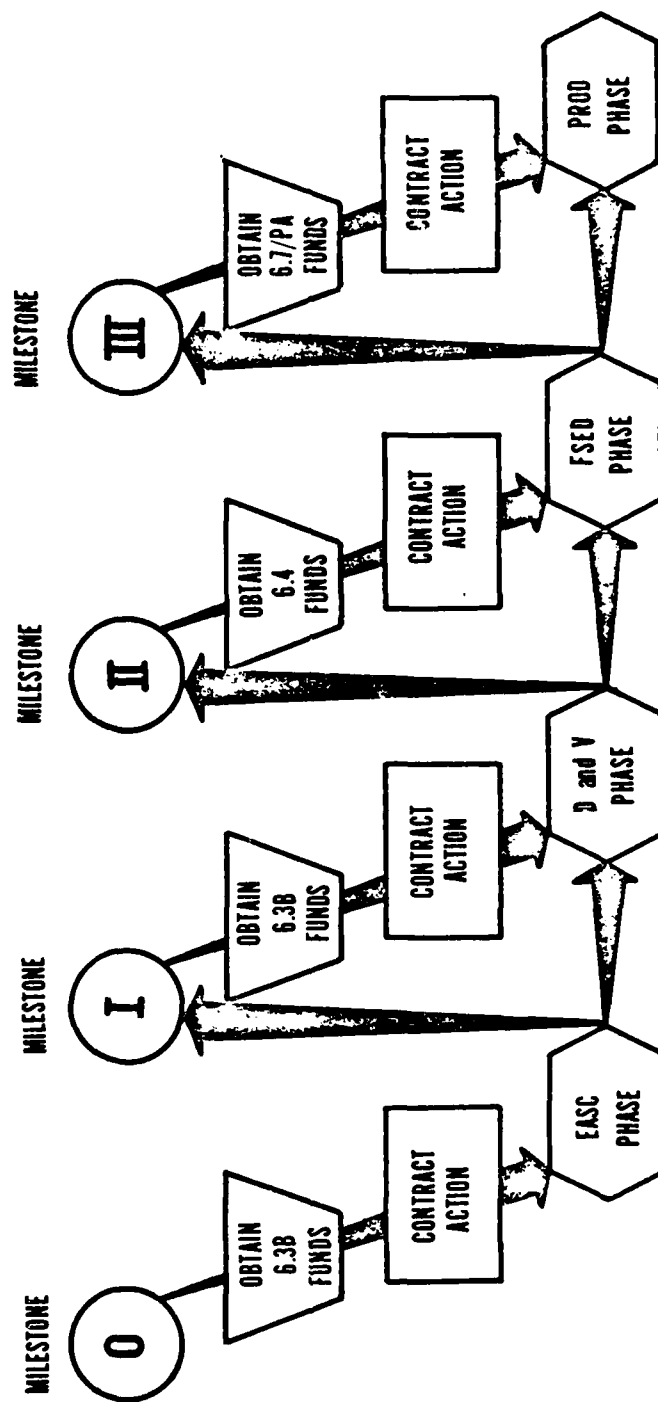
Once executive and fiscal approvals have been secured, there is one more critical step which must be taken prior to initiating or continuing the acquisition cycle: a contractual relationship must be established with private industry. Figure 4 depicts the role of contracting in this regard.

It has long been the policy of the United States to rely on competitive purchases from private industry to provide its needed goods and services. This policy is explicitly reaffirmed by OMB A-109 with regard to major system acquisitions. In fact, the use of contracting to generate competition in the private sector is central to virtually all of the initiatives embodied in that circular and its implementing regulations.

Such policy statements should be sufficient in themselves to establish the vital role of contracting in the acquisition process. However, the practical ramifications of such policies should also be explored. That is, by virtue of its reliance on private enterprise, the Government has virtually no productive capacity in its own right. It simply has no choice but to contract with industry to satisfy its needs.

8

See Chapter III of this report for a discussion of reprogramming. While that discussion is directed to obtaining initial funding for an acquisition, the process of reprogramming can be used to redistribute funds among projects during any phase of the cycle.



THE CONTRACTING ROLE IN THE ACQUISITION CYCLE

FIGURE 4

The necessity of dealing with private industry adds yet another complicating factor to the acquisition process. That is, the PM has no direct control over the development effort itself; his only measure of control over the actions of his commercial developer is provided through the contractual interface.

Despite the significance of contracting in major system acquisitions, some of the contributions which this function makes to the overall process are often overlooked. In order to fully explore the impact of contracting, it is first necessary to examine the functions of the contractual document itself. The discussion will then turn to the role of the contracting officer.

The primary purpose of the contract is to establish the formal business relationship between the parties (e.g., between the Army and private industry). However, the importance of the contractual document goes beyond merely defining the rights and responsibilities of both participants. As discussed in Chapter I of this report, the contract is the sole vehicle for integrating all of the Army's diverse system requirements into a comprehensive package for transmittal to industry. If these requirements are not properly articulated in the solicitation, proposals received from industry may prove inadequate or incomplete. In a closely related area, the contract serves as the official communication channel with the private sector. In the contract placement phase discussed above, this function is critical in avoiding misunderstandings which may lead to performance problems. After award, contractual provisions ensure an adequate flow of progress information from the contractor. The contract also serves a number of other purposes during performance. In a complex undertaking such as a major

system acquisition, the resolution of "unknowns" as the system evolves may necessitate revisions to the original scope of the effort. As such changes occur, the business relationship must be kept reasonably abreast of reality. In recognition of this fact, the contract provides a formal mechanism for its own revision. In a similar vein, accommodation of changed conditions may lead to conflict. Therefore, the contract spells out the legal and administrative procedures for conflict resolution. The contract also serves the purpose of documenting events and agreements as the system evolves. By virtue of such documentation, it provides an historical audit trail for performance measurement. Yet another role of the contract is to provide for the Army's future needs. This is particularly important in the area of technical data rights, due to the fact that if data rights are not contractually secured during the development phase, competitive options will be foreclosed for the production phase. More examples could be cited. The central point is that the contract is a multifaceted document which--if properly formulated--can serve many purposes in furthering the acquisition effort.

As a final note on contracts, per se, it should not be inferred that contracting is a static process. Different contracting techniques are required for each phase of the acquisition cycle. Different pricing arrangements will be appropriate for each phase as the level of uncertainty is reduced. Special provisions must be developed for each contract. Statements of work must parallel the refinement and definitization of the requirement document. And, as noted above, improper action in any one contract may adversely affect the Army's options in subsequent phases. This makes the contracting cycle an intricate and interwoven process which permeates the

acquisition cycle. It cannot be properly viewed in the context of one contract, but rather as a series of contractual actions with each building on the foundation created by its predecessor.

In order to provide continuity in the contracting cycle--thereby ensuring that the individual contracts fulfill their proper functions--the contracting officer must be an active participant at each phase of the acquisition process. The rationale for prescribing his participation is both legal and practical.

From a legal standpoint, it must be recognized that the contracting officer is the only Government official who can legally commit the United States to a contractual agreement. No other participant in the acquisition process--including the PM--has this authority. It can be seen that this places the contracting officer in a rather powerful position. It is also a very sensitive position in that virtually any act of the contracting officer can be viewed as an official action of the Government. Consequently, the contracting officer's discretionary authority is constrained by an elaborate set of laws and regulations. By way of illustration, the Commission on Government Procurement noted that in 1972 an Army contracting officer had a five-foot shelf of procurement and procurement-related regulations which he was responsible for knowing and applying as required.⁹ It is doubtful that the situation is appreciably changed at this writing. These same regulations also serve to constrain the manner in which the business relationship with industry is established. In applying these laws

⁹
Report of the Commission on Government Procurement, Vol. 1 (1972),
pp. 33-34.

and regulations the contracting officer must assume a para-legal role. In using them to establish the contractual relationship with the private sector, he must logically become the business manager for the acquisition effort. His dual responsibilities as both para-legal and business spokesman for the PM should be sufficient in themselves to assure the contracting officer's participation in the acquisition process. However, his legal responsibilities go beyond the core issues of establishing the business relationship. The contracting officer is also the steward of an extensive list of socio-economic policies which use the contractual vehicle to further their objectives. These include labor standards, small and minority business policies, labor surplus area preferences, and equal employment opportunity requirements. Implementation of these policies lends an additional dimension of complexity to the contracting officer's task. While they may not be central to attainment of system objectives, these socio-economic policies reflect a national commitment in these areas. No major system acquisition can proceed without due consideration to these matters.

As was discussed above, any action of a contracting officer may be viewed as an action of the Government itself. In this light, the contracting officer must serve as the official external spokesman for the Army's interests. In a similar fashion, he is the official through which industry must channel its official communications to the Government. As previously noted, the contract provides the formal vehicle for this informational exchange process. However, no contractual document can fully anticipate all issues which may arise during performance. It simply provides the mechanisms for the surfacing of these issues. Within this contractual framework, the contracting officer must be adept at establishing and maintaining a sound

business relationship with industry on a daily basis. This role requires a high level of communication skills. It also requires a thorough knowledge of virtually every aspect of the acquisition if it is to be carried out properly.

The preceding paragraphs concentrate on the contracting officer's legal responsibilities and their logical consequences. However, the contracting officer must also make a very practical contribution to the acquisition process. As noted in Chapter I, all of the diverse objectives of a major system acquisition must always be reconciled, integrated and translated into a comprehensive contractual document. While the contracting officer must necessarily avail himself of functional support in this regard, he is ultimately responsible for the finished product. He must serve as the catalyst for this effort and must consequently develop a certain acumen in many diverse fields. The contracting officer's para-legal role has already been discussed. However, he must also become familiar with the system's logistical concepts, reliability and maintainability requirements, test and evaluation criteria, cost objectives, and international implications, to name a few. In short, he must have a breadth of knowledge which approaches that of the PM himself if he is to successfully discharge his duties in this regard.

It should be recognized that the accommodation of the contracting officer's legal and regulatory duties may cause friction between himself and the PM. The positions of power assumed by each of these individuals in their own right can lead to organizational conflicts. However, proper appreciation of the unique contributions which both the PM and the contracting officer can make to the acquisition effort should lead to a climate of

mutual respect and support. It is only when their relationship is allowed to deteriorate through misunderstandings or misguided jealousies that the system acquisition process suffers from this dual allocation of responsibilities. In a more healthy climate, the relationship between these individuals can serve as a mutual check and balance system, and a breeding ground for innovative approaches to the task at hand.

CHAPTER III

ACQUISITION PLANNING REQUIREMENTS

A. PURPOSE AND DESIGN OF CHAPTER.

1. Purpose.

The objective of this chapter is to examine the planning implications of the major systems acquisition process described in Chapter II above. The discussion will concentrate on the planning requirements inherent in the acquisition cycle, itself, and the need for thorough contract planning. These areas encompass the bulk of the planning demands which are placed on the PM and the contracting officer, respectively. They also offer the greatest promise for substantive improvement.

The planning requirements of the executive approval process are primarily treated in the context of acquisition planning, per se. The two planning processes are virtually inseparable in that they are both attuned to major events in a given system's development. In large measure the executive approval milestones can be viewed as catalysts for planning subsequent phases of the acquisition cycle. However, they are so critical to a successful system acquisition that they must be planned for in and of themselves. Therefore, this aspect of the planning process will be treated briefly as a separate subject.

Considerable attention is also given to the planning implications of the fiscal approval process. This is done by more thoroughly examining selected aspects of the PPBS which have a direct impact on system acquisitions. The primary aim of this section is to improve accommodation of the PPBS through better appreciation of its interface with the acquisition cycle.

2. Design.

Sections of this chapter are presented in parallel with the format adopted in Chapter II, beginning with an examination of the planning activities inherent in the acquisition cycle itself. Succeeding sections discuss the additional planning efforts needed to satisfy the executive and fiscal approval processes, respectively. The chapter next addresses the special planning implications of the contracting cycle. It concludes with a brief analysis of disruptive factors which may impede the implementation of these plans.

The sections on Acquisition Planning and Contract Planning are constructed in three parts. The first part describes how planning activities should be carried out. This part reflects a synthesis of appropriate top level policy issuances of DOD and OMB. The second part of each section examines how planning efforts are presently conducted within the Army. Current Army implementing regulations serve as the primary basis for this discussion. Each section concludes with a comparative analysis of the first two parts. The objective of this analysis is to identify changes which could be made to (1) effect full compliance with top level policies; and (2) improve the Army's ability to effectively plan its major system acquisition programs. The regulatory analysis in this part is supplemented by the analysts' judgement as necessary.

This format is modified somewhat in the section entitled Fiscal Approval Planning, as this section assumes that the Army is fully compliant with DOD PPBS requirements under its current procedures. The first part of this section elaborates on the overall PPBS process presented in Chapter II, with an emphasis on points at which it must converge with the acquisition

cycle. The second part discusses problems in effecting this interface, and the third part suggests ways to better accommodate PPBS requirements in acquisition planning.

The section on Executive Approval Planning is primarily addressed to preparing for a Milestone review point. It is intended to illustrate that activities leading up to an executive review require planning in their own right. Such activities will be described, and problem areas for the PM will be discussed. Finally, suggestions will be offered for relieving the PM of some of these problems.

B. ACQUISITION PLANNING.

1. Introduction.

This section deals with the overall planning process which accompanies a major system acquisition. The timeframes for generating many of the strategies and plans are linked to appropriate executive approval points, and these points will serve to frame much of the discussion which follows. However, the basic planning activities which are described are inherent in sound management of a development effort. They would be required in some form even if the process were not controlled by Milestone decisions.

2. As The System Should Operate.

Current policy issuances of both OMB and DOD are consistent in their emphasis on early strategic planning for major system acquisitions. For example, OMB A-109 states that an acquisition strategy should be tailored for each program as soon as the agency decides to solicit alternative system concepts. Paralleling this emphasis, DODD 5000.1 requires each responsible DOD official to ensure that an acquisition strategy is developed and tailored for each major program. This guidance is further amplified by

DODI 5000.2. That instruction defines an acquisition strategy as the conceptual basis for the PM's overall plan for program execution, and requires that it be completed as soon as possible after Milestone 0.

In support of this emphasis on early planning, both OMB A-109 and DODD 5000.1 state that a PM should be designated to serve as the focal point for planning activities as soon as a decision is made to solicit alternative system concepts (i.e., as soon as feasible after Milestone 0). Additionally, DODI 5000.2 specifically tasks the PM with developing the acquisition strategy subsequent to Milestone 0.

Finally, in order to ensure the development of the most appropriate acquisition strategy, top level guidance encourages responsible agencies/components to provide the PM with access to previous acquisition experiences. OFPP Pamphlet No. 1 notes that necessary considerations in strategy development not covered by OMB A-109 include lessons learned from other system acquisitions. Similarly, DODI 5000.2 notes that advice and assistance in strategy formulation should be sought from experienced managers from other major system acquisition programs.

In summary, the above guidance clearly requires that an acquisition strategy be developed by the PM as soon as possible after Milestone 0. It also encourages reliance on the service's corporate memory to aid the PM in this endeavor.

3. As The Army System Presently Operates.

While AR 1000-1 affirms the need for early development of an acquisition strategy, there are currently no formal implementing procedures to ensure a consistent, disciplined approach to this task. In fact, the only known guidance for acquisition strategy content is reflected in a DCSRDA

letter of instruction for MENS preparation. This guidance is rather brief and is largely concerned with questions of compliance with OMB A-109 policies. There is apparently no formal guidance for the development and refinement of this strategy throughout the acquisition cycle.

In this regard, Draft AR 70-1 is intended to provide implementation procedures for Army research, development and acquisition. However, the document goes no further than to reaffirm the need for an acquisition strategy. In its only reference to content, it implies that a strategy is synonymous with its implementation plans. As noted above, DODI 5000.2 clearly differentiates between these terms by stating that a strategy must be developed to provide a basis for the generation of plans. Of equal importance, the Draft AR requires no formal plans to be generated prior to the initiation of the Demonstration and Validation Phase. Even if one were to accept its convention for usage of the terms, the absence of formal planning prior to Milestone I is patently noncompliant with top level policies. Finally, it should be noted that the acquisition plan required by the DRAFT AR receives no review by higher headquarters.

To summarize, while the function of implementing regulations should be to expand and tailor top level policies, Army regulations provide little amplification with regard to acquisition strategy development. The emphasis on plans, rather than strategies, has resulted in little formal attention to strategy content. Further, the absence of a requirement for early strategy generation has led to a lack of formal discipline in approaching this task.

The situation outlined above is compounded by the fact that an Army PM is not normally appointed until after Milestone I. This practice is not

fully in accordance with the intent of the policy documents cited above. More importantly, it has the practical consequence of depriving the Army of a focal point for strategy generation during the critical formative stages of the acquisition cycle.

Finally, there is as yet no effective repository for cross fertilization of proven techniques or lessons learned among PM's. Some recent initiatives may help in this regard. For example, the recently published DARCOM "Materiel Acquisition Management Guide" provides the field with some general lessons learned. Also, the Army Procurement Research Office is participating with the Defense Systems Management College in a series of studies of lessons learned on specific projects.¹⁰ However, it is felt that continued improvement is needed.

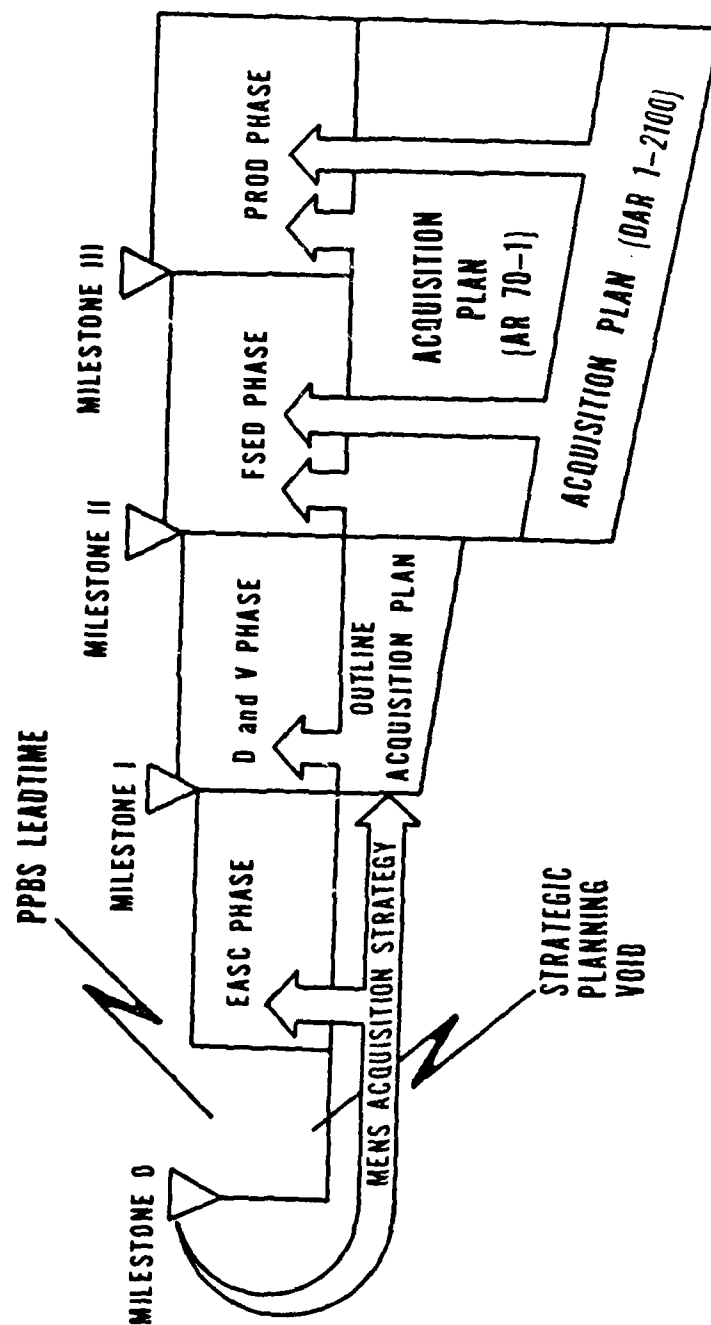
The Present Army Planning System is graphically displayed in Figure 5, below. This figure should serve as a frame of reference for the paragraphs immediately below. It will also be referred to in the subsequent sections on Fiscal and Contract Planning.

4. As The Army System Might Be Improved.

This section presents a broad scheme for improvement of the Army's major systems acquisition planning system. It is based on a synthesis of perceived regulatory shortfalls, field comments and the judgement of the researchers. Detailed recommendations to effect these broad improvements are reserved for Chapter IV of this report.

¹⁰

APRO Consulting Project 80-58, "Army Acquisition Lessons Learned."



THE PRESENT ARMY PLANNING SYSTEM

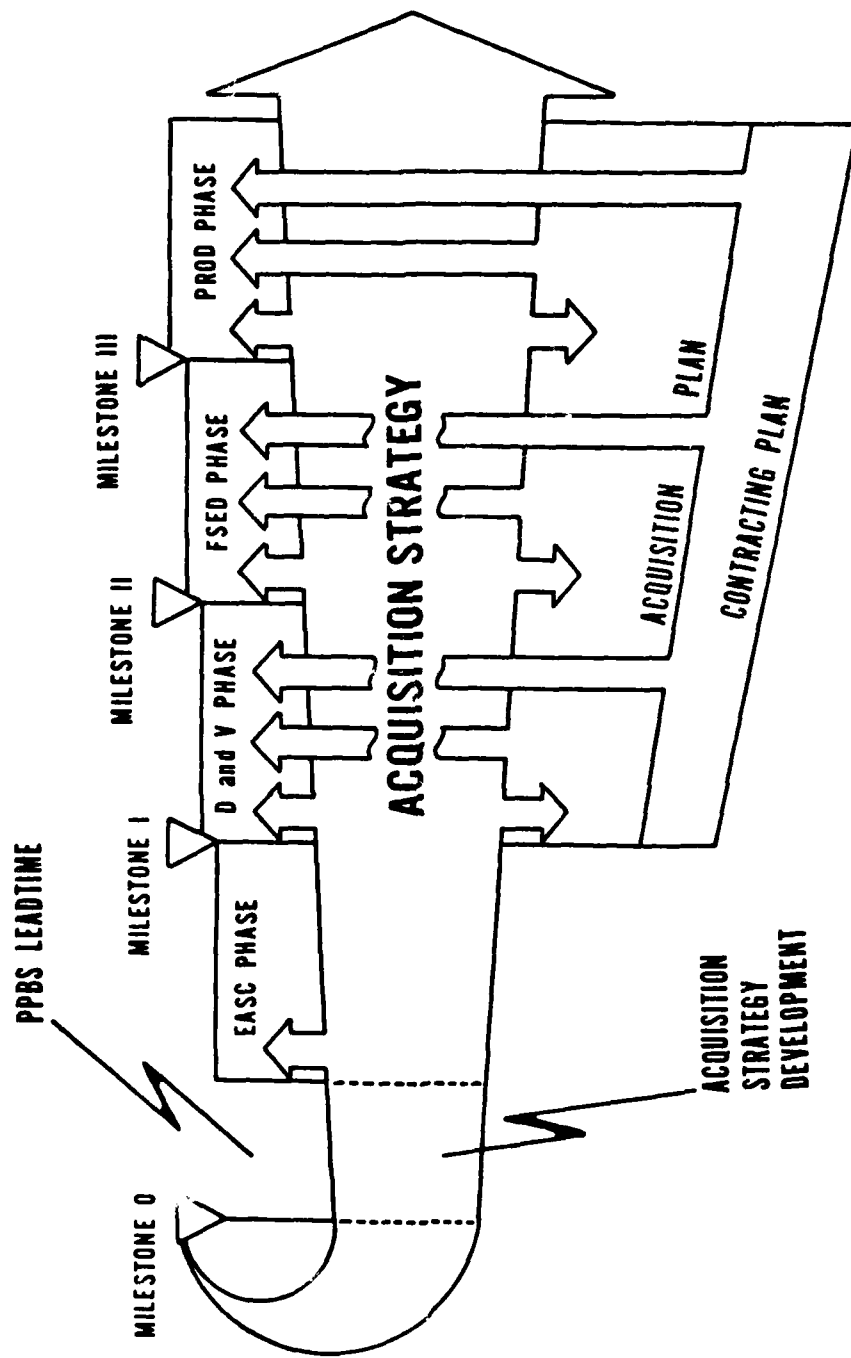
FIGURE 5

First, certain regulatory revisions are needed to reconcile differences in emphasis between top level policy issuances and Army implementing regulations. These revisions should include a greater emphasis on early strategic planning and expanded guidance on the areas to be covered by such strategies.

Second, in order to implement the above revisions, the PM for the system should be appointed as soon as possible after Milestone 0. This will have the dual benefit of ensuring full compliance with top level policies and providing a focal point for acquisition strategy development during the inceptive stages.

Third, as it may not be practical to extensively staff a project management office during the concept exploration phase, some organizational mechanism is needed to aid the PM in developing his strategy if he so desires. It is felt that this aid should be provided at the DARCOM level for major system acquisitions. A multi-disciplinary panel under the direction of the Deputy Commanding General for Materiel Development is envisioned. The panel should include a standing group which represents those directorates most directly concerned with the acquisition process. The PM designee should also be included. Convening this panel at the DARCOM level would ensure that lessons learned from other Development Commands are considered. It could also help in orchestrating system or subsystem interdependencies which involve more than one Development Command. A more detailed recommendation in this regard is set forth in Chapter IV of this report.

Figure 6 reflects a conceptualization of the proposed system. The figure also includes revisions for Contract Planning and certain new terminology which will be explained in Chapter IV. It should serve as a point of



THE PROPOSED ARMY PLANNING SYSTEM

FIGURE 6

reference for the remainder of the report.

C. EXECUTIVE APPROVAL PLANNING.

As previously noted, the executive approval Milestones serve the ancillary function of triggering the development of certain planning documents. That is, at Milestone I, II and III the PM must prepare an Integrated Program Summary (IPS) to provide a management overview of the program in accordance with DODI 5000.2. This is currently used strictly as a means of providing information to executive review authorities. Similarly, at Milestone I the PM must generate an Outline Acquisition Plan in accordance with Draft AR 70-1; this is supplanted by a full Acquisition Plan at Milestone II. In a less direct fashion, the "Acquisition Plan" required by DAR 1-2100 must be submitted and approved prior to issuance of solicitations for the next phase of the cycle. In order to minimize delays subsequent to Milestone approval, the authority to solicit offers must be obtained sufficiently in advance of the scheduled Milestone to accommodate contracting leadtimes. Thus, the executive approval points serve as catalysts for generating and updating almost every major planning document.

In addition to the above, preparing for a Milestone review requires planning in its own right. As described in Chapter I, the system must go through a two-tiered review process at the DA and DOD levels. Planning for the DA review is formally triggered by the issuance of an ASARC Guidance Letter from DCSRDA approximately 12 months in advance of the scheduled review. This letter establishes suspense dates for receipt of various documents required for ASARC deliberations, beginning well in advance of the scheduled meeting. To meet the required suspense dates, the PM must begin planning even in advance of the receipt of the guidance letter. Similarly, DODI 5000.2 sets forth a six month review cycle at the DOD level. Assuming

serial reviews, the PM must begin planning for both reviews approximately 18 months ahead of the anticipated executive approval date. He must also have the ability to incorporate changes into his documentation which may occur in the interim period.

The difficulty of preparing for a Milestone review is compounded by the fact that a system only goes through the cycle once. Unless the PM is fortunate enough to have experience on other systems (either through his own assignments or through his support personnel), preparations for a Milestone must be a one-time experience.

As a final compounding factor, the guidance for preparing the required documentation is scattered throughout many regulations. The Master ASARC Guidance Letter for Milestones II and III, for example, references 33 separate documents. It is extremely difficult and time consuming for unexperienced personnel to research all of these requirements.

Some form of corporate memory aid is needed to assist the PM in this regard. A promising computer assistance technique to improve this aspect of planning is discussed in Chapter IV of this report.

D. FISCAL APPROVAL PLANNING.

1. Introduction.

While the sections of this chapter on Acquisition and Contract Planning are aimed at identifying avenues for substantive improvements, this section is primarily concerned with accommodating PPBS requirements in acquisition planning. Suggestions for revising the PPBS itself would be beyond the scope of this project.

The format of this section roughly parallels that of Section B, Acquisition Planning. It begins with a discussion of key dates for the

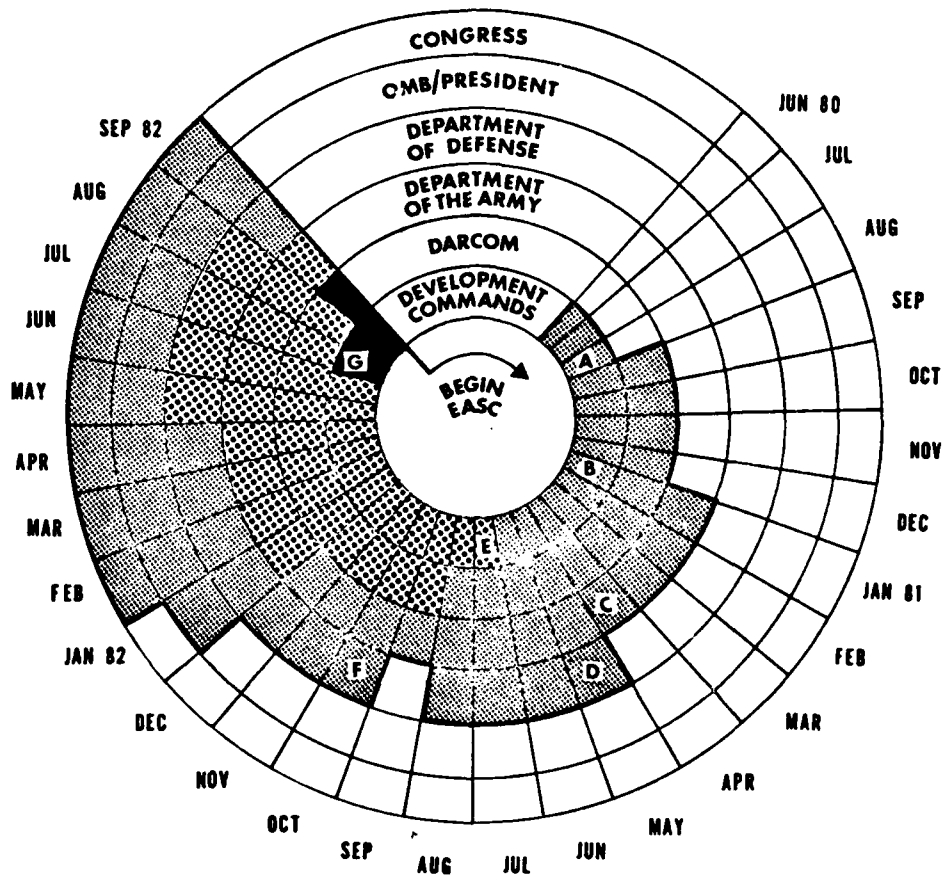
programing and budgeting process, together with their acquisition planning implications. It then moves to an analysis of the interfaces which must be achieved between events in the acquisition cycle and their PPBS dates. The concluding paragraphs summarize the foregoing analysis and suggest ways of achieving better coordination of the processes.

2. The Planning, Programing, Budgeting System.

As noted in Chapter II, the planning phase of the PPBS is a long range activity which is concerned with overall force levels rather than specific systems. It is an activity which precedes MENS initiation and is, therefore, beyond the scope of this report's definition of the acquisition cycle. Consequently, this section will concentrate on the programing and budgeting aspects of the PPBS.

Figure 7 presents a graphic display of one programing and budgeting cycle. The months in which specific actions must be taken are displayed clockwise around the outer circle of the graph. The concentric bands correspond to the hierarchical review levels through which a given program or budget submission must pass. At each succeeding level, lower echelon submissions are analyzed, prioritized, modified as necessary, and consolidated for transmittal to the next level. The full fiscal year 1983 programing and budgeting cycle is displayed on the figure. Portions of the fiscal year 1984 and 1985 cycles have also been included to illustrate the overlapping nature of the system. The various points designated by alpha characters represent specific actions which occur during the cycle. Their importance is discussed below.

Before turning to a detailed discussion of specific actions and dates, two points should be made concerning this graph. First, only the



LEGEND:

FY83 CYCLE [Pattern]
 FY84 CYCLE [Pattern]
 FY85 CYCLE [Pattern]

A - FIRST PROGRAMING ACTION (PREFERRED)
 B - FIRST PROGRAMING ACTION (EXCEPTION)
 C - MARC
 D - POM SUBMISSION
 E - SECOND PROGRAMING ACTION
 F - FIRST BUDGET SUBMISSION
 G - THIRD PROGRAMING ACTION

**PLANNING, PROGRAMING, BUDGETING
 SYSTEM**

FIGURE 7

most relevant events have been included in the figure; there are many other important activities in the system. Second, the figure only displays program and budget submissions as they proceed from the lower echelons, through the various review authorities and to Congress. It does not indicate the guidance which flows from the top downward to establish the framework for these submissions. There is actually an almost continuous dialogue among the various levels as programs and budgets are solidified.

Point A on the figure represents the normal timeframe for submission of the Development Commands' proposed programs to DARCOM for review. This point reflects the first programming action which would be taken to incorporate a new system acquisition into the Command's research, development, test and evaluation (RDTE) program. This is the preferred approach. However, during the interview phase of this research, it was discovered that it is possible to incorporate urgent actions into the cycle on an exception basis subsequent to the normal Command submission. These exceptional actions must be taken no later than the following January--Point B on the graph. The reader is cautioned that this approach is rarely used; nevertheless, it is possible to program critical new acquisitions into the proposed program as late as this date.

Point C represents the meeting of the Materiel Acquisition Review Committee (MARC).¹¹ The MARC integrates the Army's materiel acquisition programs for the fiscal year in accordance with DA and DOD guidance. This

¹¹
The MARC was previously called the Research Development Acquisition Committee (RDAC); this nomenclature frequently appears in the literature.

integrated program is then incorporated into the RDTE portion of the overall Army Program Objective Memorandum (POM) and forwarded to DOD at Point D. As discussed in Chapter II, the POM is then reviewed at the DOD level in conjunction with the programs of other services. It is adjusted as necessary, finalized and returned to the Army in August in the form of a Program Decision Memorandum. One full year has now passed since the original Development Command submissions.

The approved POM serves as the basis for budget formulation. In the case of the RDTE program, budgeting is done on an incremental basis (i.e., for one year periods). Therefore, separate budgeting actions must be taken for each year that a major system is under development. When the budget is formulated, it is submitted to DOD for further review and processing. This occurs at Point F.

Once the Army's budget is submitted, it goes through the review and approval process described in Chapter II. The Congressional appropriation bill is normally passed and signed by the President in September, two full years after the original Development Command Program submissions.

Points E and G on the figure illustrate the fact that two additional programming actions will have been initiated by the time the original fiscal year 1983 submission is ready for obligation under contract.

There are three basic planning implications attendant to the PPBS: First, the PPBS is rigidly time constrained, with specific actions being required by pre-established dates. In view of the two year PPBS cycle, cost estimates to support funding requests must be generated significantly in advance of events in the acquisition cycle. Figure 7 graphically displays this fact for a new system acquisition. That is, resource estimates must

be formulated to support Development Command program submissions at Point A. However, funds will not be available to begin exploring alternative system concepts until two years later. This extended planning horizon forces estimates to be formulated in an environment of many "unknowns"--a most difficult task.

Second, adjustments may be made to program or budget submissions at any time and at any level throughout the PPBS cycle. In an era of fiscal constraint, these will generally be downward adjustments. A decrease in funding below the original cost estimate will almost inevitably lead to restructuring the activities of the acquisition cycle to some degree. Such restructuring may impact many aspects of the system's development, from quantity projections to logistics plans. Therefore, the PM must have a quick response contingency planning capability in order to analyze the impact of funding cuts on the development effort. This will allow for either restructuring the program or defending the original funding request on the basis of a strong trade-off analysis.

In a closely related area, the impact of adverse actions in the PPBS must be analyzed in light of the thresholds upon which executive approval was based at the last Milestone decision point. If the impact is severe enough, a revised Secretary of Defense Decision Memorandum may be required.

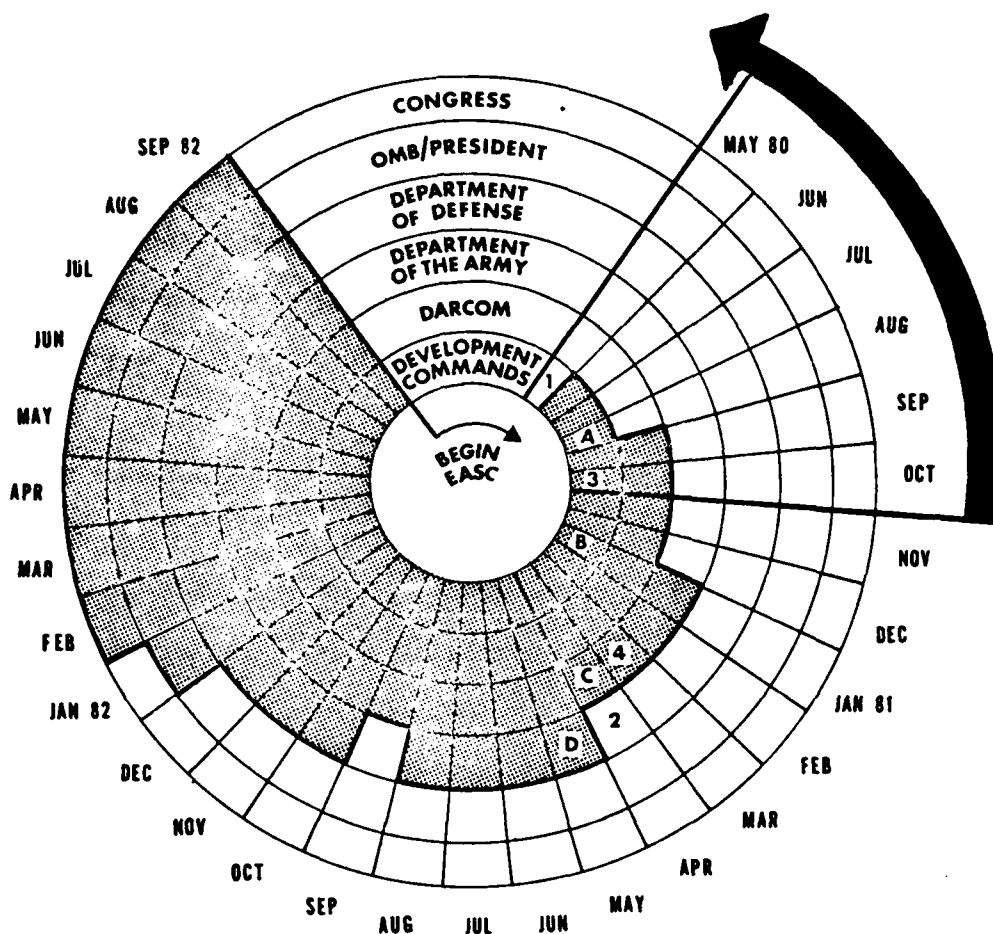
3. Coordination of Fiscal and Executive Approval Planning.

DODI 5000.2 states that the services must identify all new acquisition starts in the yearly submission of their respective POM's. It also requires that new major system acquisitions must have a MENS submitted to the Defense Acquisition Executive (DAE) no later than the POM submission date. However, beyond these basic requirements, it encourages the services

to submit a proposed MENS in sufficient time to allow for Milestone 0 approval prior to POM submission. Army guidance parallels these requirements, but one refinement should be noted. Pursuant to a DCSRDA letter of instruction issued on 7 January 1980, as a minimum a MENS must arrive at DA prior to the MARC.

Figure 8 displays the effect of the above requirements on the inceptive phases of the acquisition cycle. It builds on Figure 7 by superimposing events from the executive approval cycle on the basic PPBS graph. These events are identified by numeric characters on the figure. The objective is to display the most appropriate timeframe for initiating a MENS, so that the period of inactivity between the executive and fiscal approval points will be minimized.

Points 1 and 2 on the figure reflect the preferred approach to coordinating MENS initiation and approval with the PPBS. That is, if a MENS is initiated not later than 31 May, it should receive executive approval at Milestone 0 the following April. This would be just prior to POM submission, thus meeting the preferred criteria outlined above. It should be explained that there has not been a great deal of experience in generating and processing a MENS at the outset of the acquisition cycle. Therefore, the timeframe for obtaining approval is somewhat judgmental. The eleven-month period used in the figure is based on the following rationale. The "DARCOM/TRADOC Materiel Acquisition Handbook" allows five months for processing a MENS to DA for review. However, no timeframes have been formally established for the review cycle at the DA level. Therefore, for purposes of this analysis, it has been assumed that DA's review and approval cycle would approximate that required by DOD. In that regard, DODI 5000.2, as



LEGEND:

- 1 - MENS INITIATION (PREFERRED)
- 2 - MENS APPROVAL
- 3 - MENS INITIATION (EXCEPTION)
- 4 - EXCEPTION MENS TO HQDA
- A - PROGRAMING ACTION (PREFERRED)
- B - PROGRAMING ACTION (EXCEPTION)
- C - MARC
- D - POM SUBMISSION

**INTERFACE OF THE
PLANNING, PROGRAMING, BUDGETING
AND
MATERIEL ACQUISITION DECISION
PROCESSES**

FIGURE 8

amplified by an Office of the Under Secretary of Defense memorandum of 11 Mar 80, establishes a three month period for deliberations at that level. Consequently, the eleven month cycle reflected on Figure 8 assumes five months for submission to DA, three months for processing at that level, and three additional months for final action by DOD. If these timeframes are found to vary as more experience is gained, the ideal time for MENS initiation would have to be adjusted accordingly. The central point is that it should be possible to coordinate the initiation of executive and fiscal approval requests with reasonable accuracy. It should be noted, however, that even under these conditions there is a seventeen month period of relative inactivity pending receipt of funds.

Points 3 and 4 illustrate the exception approach to coordinating the initial executive and fiscal approval requests. As noted above, the MENS must arrive at DA prior to the MARC in April. Again assuming a five month processing time to that level, the MENS would have to be initiated in October to reach DA by the following March. As the MENS must also be forwarded to the DAE by POM submission in May, only two months could be allowed for DA review. Given the normal three months for DOD processing, executive approval would be forthcoming in July, leaving a PPBS leadtime of fourteen months. The exception approach is obviously more difficult. The difficulties are compounded by the fact that an exceptional programming action would also have to be submitted no later than January (Point B on the figure). However, it may well be worth the effort to take these steps, as the next opportunity to follow the preferred approach will not occur for twelve months. The MENS, of course, could be initiated at any time in the interim. However, it is the time-constrained PPBS that is the pacing item

for actually beginning the concept exploration phase.

The foregoing analysis illustrates several points. First, even under the best circumstances (i.e., perfectly timing the exception methods for both programing and MENS initiation), the PPBS leadtime can only be reduced to fourteen months. This leaves a rather lengthy period of relative inactivity in the early stages of the acquisition cycle. Second, proper timing of a MENS initiation can take advantage of the "window" indicated on Figure 8. That is, under the preferred approach a MENS must be initiated no later than 31 May 1980 if it is to obtain funding in fiscal year 1983. Even if the exception method is used, the MENS must be prepared by 31 October. The period bounded by these dates has been identified as the MENS INITIATION WINDOW. If this "window" is missed, there is no recourse (other than reprograming as discussed below) but to wait for the next PPBS cycle. In the worst case (i.e., MENS initiation in November 1980), the leadtime to obtain fiscal year 1984 funds would be twenty-four months. Third, despite the existence of this window, it is not always possible to take advantage of it. Initiation of a MENS, like all other aspects of the acquisition cycle, is event oriented. That is, the recognition of a need may occur at any time; it will not necessarily coincide with PPBS cycle. Consequently, the primary value of the window is to establish deadlines for MENS initiation which provide the best opportunity to coordinate the executive and fiscal approval process.

If the minimum PPBS leadtime is fourteen months, the question arises as to the treatment of extremely urgent needs. In this regard, DODI 5000.2 provides that for an urgent requirement a MENS should be submitted with a request for reprograming action.

Reprogramming is essentially a "tradeoff," whereby resources are re-allocated among programs and projects in order to apply them to the highest priority needs. If a new major system acquisition is sufficiently urgent, funds can be reprogrammed from lower priority projects to allow for beginning the concept exploration phase immediately. However, any reprogramming of funds (regardless of amount) to a new effort which has not previously been justified before Congress in the PPBS requires prior approval from DA. Additionally, if the amount to be reprogrammed is \$2,000,000 or more, the prior approval of DOD is required. Congress must also be notified in advance of the Army's intent to reprogram funds in that amount; if Congress does not object within fifteen days, the action can proceed.

Two points should be emphasized regarding reprogramming. First, in order to fund an urgent new acquisition, resources previously allocated to other lower priority programs must be reduced. As discussed above, such unexpected funding reductions can have far reaching effects on the losing project's acquisition strategy. Second, as new major system acquisitions can be expected to require more than \$2,000,000 for concept exploration, reprogramming maintains the spirit of prior Congressional approval for new starts through its notification requirement.

4. Interfacing With The PPBS In The Later Phases Of The Acquisition Cycle.

The foregoing paragraphs have concentrated on coordinating the executive and fiscal approval processes during the inception stages of the acquisition cycle. This is because these early efforts are apparently causing the greatest problems at present (i.e., the 1980/81 timeframe). Nonetheless, certain points should be made regarding the later phases of

the cycle.

The requirements to incrementally fund a development effort necessitates requesting fiscal approval on a yearly basis. This annual rejustification process means that a given acquisition is subjected to close scrutiny throughout the life cycle. As executive approval points are generally less frequent, the fiscal approval process serves as the primary short term management control over the system's development.

Secondly, as noted in Chapter II, different funding categories are applicable for various phases of the acquisition cycle (see Figure 3). In view of the fact that the acquisition cycle is event oriented, executive approval points will most likely not coincide with the time-paced fiscal approval process. Consequently, it may be necessary to budget more than one fund category in a given fiscal year to ensure an orderly transition from one phase to the next.

Finally, failure to achieve a planned advance in the acquisition cycle can delay an executive approval Milestone. Similarly, a Milestone decision may take the form of requiring additional efforts in a given phase of the cycle. Any such delays in the transition from one phase to the next may require restructuring the funding profile of the project. For example, the PM may have planned to be ready for a Milestone II decision point six months into the fiscal year. If so, he would have budgeted six months of advanced development (6.3B) funds and six months of engineering development (6.4) funds. It can be seen that a three month delay in the Milestone decision would change this profile accordingly. If no excess advanced development funds are available in the project account to cover the extended demonstration and validation effort, reprogramming will be necessary. When

the dynamic nature of the acquisition cycle is coupled with the two year planning horizon of the PPBS, the potential for this type of funding problem becomes readily apparent.

In closing this section, it is once again emphasized that the above discussion by no means covers all aspects of the PPBS. However, it highlights those aspects of the system which have the most direct bearing on the major system acquisition cycle.

E. CONTRACT PLANNING.

1. Introduction.

This section addresses contract planning in the context of the definitional conventions adopted in Chapter I of this report. That is, contract planning is a rather restricted subelement of overall acquisition planning. As such it must rely heavily on other planning documents to provide the background information required to develop sound contracting strategies and plans. In short, it should be supportive but not duplicative of other planning efforts.

The ensuing discussion returns to the format originally adopted in Section B of this chapter (Acquisition Planning). This comparative analysis technique is designed to highlight areas which offer promise for substantive improvements.

2. At The System Should Operate.

While DODI 5000.2 includes Contracting as an element to be included in the Integrated Program Summary supporting an executive approval request, it provides no other guidance with regard to contract planning. The primary source of information in this regard is Section 1-2100 of the Defense

Acquisition Regulation (DAR 1-2100).¹² Consequently, that portion of the DAR will be used as the primary point of reference for analyzing the manner in which contract planning should be conducted.

The first point to be addressed is the timing of a contracting plan. In that regard, the DAR is clear in stating that contract planning should commence with the initiation of the document to obtain program or project approval. In the case of a major system acquisition, this would be the MENS initiation date. The DAR goes on to say that, as a general rule, the contracting plan should be prepared concurrently with the request for program funding (i.e., at the time the first programming action is taken in the PPBS). This guidance leaves no doubt that contract planning is intended to begin during the very inceptive stages of the acquisition cycle. This fact should be intuitively clear in view of the fact that contracts will be used as the vehicle to explore alternative system concepts during phase one of the cycle. Nevertheless, the need for early contract planning is important enough to warrant special emphasis in the DAR.

In a similar vein, the DAR guidance cited above stresses the necessity of integrating contract planning with executive and fiscal approval requests. This illustrates the need for a coordinated approach to overall acquisition planning, wherein the various subelements are developed in a systematic and mutually supportive manner.

12

The reader should recall that the DAR actually refers to an "acquisition plan." Certain license has been taken with terminology in this section to avoid confusion between the "acquisition plans" called for by the DAR and Draft AR 70-1, respectively.

In order to achieve this integrated approach to planning, the DAR calls for close coordination and cooperation between the PM and the contracting officer in carrying out their respective roles in the process. It makes note of the fact that the PM is ultimately responsible for contract planning by virtue of his role in orchestrating the overall acquisition planning effort. However, it also emphasizes the key role to be played by the contracting officer in preparing and processing the formal contracting plan itself. A supportive climate with a free flow of information between these individuals is obviously needed to ensure the best contractual approach is selected in light of the situation at hand.

Finally, it should be noted that the DAR reserves a great deal of latitude in contract planning to the discretion of the services. While guidelines for the content of the plan are provided, no precise format is prescribed. Similarly, no review or approval requirements are established. In short, the DAR sets forth broad policies for contract planning while reserving latitude for implementation to the judgement of the individual services.

3. As The Army System Presently Operates.

The basic problem with contract planning within the Army is that there is little discipline in the process during the early phases of the acquisition cycle--precisely when such planning would be most beneficial.

To illustrate this point, it is noted that Draft AR 70-1 does not require a contracting plan to be documented until the system is ready to enter the full scale engineering development phase. By that time, many optional contracting strategies may have been foreclosed. It is during the early competitive phases of an acquisition when the contractual tool can

be most effective.

The emphasis on the latter phases of the cycle is also manifest in the Army Defense Acquisition Regulation Supplement (ADARS). Section 1-2100 of the ADARS reserves approval of contracting plans during the development phases of the cycle to the individual commands, unless such approval authority is specifically retained by higher authority. In other words reviews at levels above the local command are on an exception basis. It is only when the system moves into the production phase that higher headquarters review becomes a matter of course.

Two other points should be made with regard to contract planning within the Army. First, many of the elements currently reflected in the DAR's illustrative "acquisition plan" format duplicate information which must be documented in the Integrated Program Summary (IPS) for executive approval purposes. While the DAR format is only intended to be a guide, a review of recent DARCOM "acquisition plans" revealed that this format is used in almost every case. Such duplication in documentation diverts valuable time from management of the project, itself, and should be eliminated to the degree possible. The final point to be addressed concerns current review and approval thresholds. It is felt that DARCOM and DA resources should be devoted to reviewing major contractual actions (regardless of the cycle phase), while reserving nonmajor actions to the individual commands. If this premise is accepted, the current ADARS review thresholds are unrealistically low. The ADARS currently calls for approval by higher authority for production contracts (or groups of contracts) expected to exceed \$15,000,000 for all years, or \$5,000,000 in any one year. In comparison, the criteria for MENS initiation set forth in DODI 5000.2

established a threshold of \$500,000,000 in estimated production costs to differentiate between potential major and nonmajor systems.

4. As The Army System Might Be Improved.

As indicated by the above analysis, there is a need to place greater emphasis on earlier contractual planning within the Army. To be more specific, it is felt that a Contract Strategy should be developed at the outset of the acquisition cycle, in parallel with and in support of the Acquisition Strategy. This strategy should then serve as the basis for generating detailed implementation plans for each phase of the acquisition cycle. This approach would provide more structure and discipline to the contract planning process.

In order to implement the system outlined above, the contracting officer who will support the development effort should be designated as soon as Milestone 0 approval is obtained. While the contracting officer would not necessarily be dedicated to the project at that time, his early appointment would ensure his participation in the planning process during the inceptive phases.

To parallel this revised emphasis on early contract planning, review and approval processes should be reoriented to concentrate on the front end of the cycle. Review thresholds should also be revised to better differentiate between major and nonmajor systems. Linking review requirements with the source selection authority level is suggested, in lieu of prescribing monetary thresholds.

Finally, it is felt that contract planning should concentrate on core issues, while relying on other documentation such as the Integrated Program Summary to provide the background and status information needed by

the reviewing authorities. A specific recommendation to accomplish this is included in Chapter IV.

F. PLANNING FOR OTHER MANAGEMENT REVIEWS.

The planning activities outlined above are felt to capture the most significant and pervasive requirements which are levied on the PM and contracting officer, respectively. However, two other management requirements deserve some attention.

The first of these activities covers the Review and Command Assessment of Projects (RECAP) and the Department of the Army Program Review (DAPR).¹³ RECAP's are conducted at the DARCOM level, while DAPR's consist of a pre-briefing at DARCOM and a final briefing at DA. RECAPS are generally provided by the PM on a semiannual basis, although selected systems may require quarterly presentations. DAPR's are conducted at eighteen month intervals. The basic function of each is to provide a management overview of the project's status at that point in time. When viewed in that light, they have few planning implications, per se, other than planning for the event itself. They are similar to the executive approval process in that regard.

The second activity to be addressed is much more planning oriented. This is the Logistics Command Assessment of Projects (LOGCAP).¹⁴ The principal objectives of LOGCAP are as follows. First, it is designed to assure timely review of all materiel acquisition programs to insure that integrated logistics support (ILS) elements are accorded requisite consideration

¹³

DARCOM Regulation No. 1-34 (1977).

¹⁴

DARCOM Regulation No. 1-41 (1978).

throughout the system acquisition process. Second, it is intended to assure identification of system supportability issues early in the acquisition process to enable their resolution prior to production and deployment. Finally, LOGCAP strives to assure that materiel to be fielded is logistically supportable, meets operational and readiness requirements prior to deployment, and that these requirements are demonstrated during operational testing. The LOGCAP process is two-tiered. LOGCAP REVIEWS are required for all DARCOM acquisition programs. These reviews are presented by the PM to the Readiness Command to whom system responsibility will be transitioned. They are required 60-90 days before Milestones I, II and III; 60-90 days prior to Development Test/Operational Test II (DT/OT II); and 90-180 days prior to initial fielding. LOGCAP BRIEFINGS are normally required for all major systems and DA designated nonmajor systems. These briefings are presented by the PM to the DARCOM Deputy Commanding General for Materiel Development or Readiness, as appropriate. They occur 60 days prior to Milestones I and III; 60 days prior to DT/OT II; and 90-180 days prior to fielding. For those systems requiring LOGCAP briefings, the requirements for LOGCAP reviews may be waived at the discretion of the cognizant Readiness Command.

It can be seen that the LOGCAP process is very much a planning exercise designed to ensure that ILS is given sufficient attention during the development phases of the acquisition cycle. This report can offer no comment on the process, other than to endorse its continued use. Logistics supportability is a major concern at present, and it can be expected to be even more critical as the next generation of Army materiel is fielded. Any initiatives in this area are to be commended.

G. DISRUPTIVE INFLUENCES.

No discussion of acquisition planning would be complete without some attention being given to the unforeseeable developments which can disrupt even the most thorough plans. All of the disruptive influences which may occur during the acquisition cycle cannot be examined here. However, some of the more common disruptions should be highlighted.

Perhaps the most common disruptive influence on major system acquisitions is technological uncertainty. This becomes more likely if a given development effort seeks to attain a significant advance in the state of the art. Failure to achieve the anticipated advance can necessitate restructuring virtually all of the planning parameters attendant to the acquisition. In the extreme, such a failure may lead to the termination of the development effort.

A second major source of disruption stems from fiscal uncertainty. The types of disruptions which may be encountered during the fiscal approval process have already been examined. However, another source of fiscal uncertainty has not been touched upon. This uncertainty stems from the performing contractor. That is, despite the thoroughness of the Army in developing its cost estimates, the ultimate price of the development is largely determined by the contractor. Particularly in a sole source environment, the Government may have no recourse but to accept a contract pricing arrangement which approximates the contractor's proposal. If this pricing arrangement requires funding in excess of the budgeted amount, two options are open. Either the Government must obtain additional funds, or it must accept a reduced level of performance. If the latter course of action is pursued, some of the planned requirements must be curtailed or eliminated.

This will require some difficult trade-off decisions which can have both immediate and long range effects on the development effort.

Each executive approval Milestone also has the potential to disrupt the PM's planning for the acquisition cycle. For example, the PM may be directed to more fully evaluate system alternatives, or he may be required to conduct additional testing to validate the system's technological maturity. Whatever the nature of this executive redirection, it must be accommodated, and future plans must be adjusted accordingly.

Other sources of disruption include change in threat, change in mission, subsystem slippage, market instability and political intervention. Any or all of these disruptive influences may occur at any stage of the acquisition cycle. Their potential for adversely affecting an orderly development effort cannot be overstressed.

H. UPDATES AND REVISIONS.

Plans and strategies should be updated at pre-established intervals throughout the acquisition cycle. They may also have to be revised in response to unanticipated developments or unforeseeable disruptions which may occur at any time. The first four parts of this section discuss the procedures for updating the following documents discussed in Sections B through E of this chapter. Each part begins by examining current updating requirements and concludes by identifying suggested improvements. A brief discussion is included to cover the methodology which should be employed to effect these updates. The section concludes with a discussion of the treatment of revisions.

1. Acquisition Planning Updates.

As previously discussed, acquisition planning encompasses the development of both strategies and plans. Each is discussed separately below.

Just as the regulations provide little substantive guidance for developing acquisition strategies, they give little attention to updating these strategies. OMB A-109 only says that the strategy should be refined as the program progresses through the acquisition process. Similarly, AR 1000-1 states that the acquisition strategy will be expanded and refined as appropriate. The only document that implicitly establishes timeframes for updating the strategy is DODI 5000.2. In its format for the Integrated Program Summary (IPS), the instruction requires that an Overview of Acquisition Strategy be included with each submission. As the IPS must accompany each executive approval request, this requirement should ensure that the strategy is reviewed and updated as necessary at each Milestone decision point.

The primary guidance for developing acquisition plans is contained in Draft AR 70-1. That regulation requires that an Outline Acquisition Plan be generated when the system concepts are ready to proceed to the demonstration and validation phase. This is converted to an Acquisition Plan upon entry into the full scale engineering development phase. The conversion is essentially an updating action. Beyond refining the elements of the Outline Acquisition Plan, the update also incorporates the first required contracting

plan.¹⁵ After this conversion effort, the Draft AR only requires that it be refined and updated during the materiel acquisition process. No specific points in the cycle are established for such updates.

It is felt that a requirement should be established to review both strategies and plans at each Milestone decision point to identify necessary updates. This would once again serve to inject more discipline into the acquisition planning system.

2. Executive Approval Planning Updates.

As alluded to above and in preceding sections, executive approval Milestones serve as catalysts for the generation of various planning documents. They should similarly serve to trigger the updating of acquisition strategies.

3. Fiscal Approval Planning Updates.

The requirement to incrementally fund development efforts ensures that programing and budgetary submissions are updated on a yearly basis. While this incremental funding requirement may have adverse effects on program stability, it does ensure that the system's funding profile is reviewed frequently.

4. Contract Planning Updates.

Under the current DAR guidance, the initial contracting plan should include a milestone chart reflecting the points at which the plan will be updated. The DAR goes on to say that updates should be scheduled to

¹⁵ At present the Draft AR calls for a full DAR 1-2100 "Acquisition Plan."

coincide with executive approval points and the transition from one acquisition phase to the next.

It is felt that executive approval points are appropriate for updating the contracting plan. However, to ensure an orderly transition to the next phase of the cycle, contracting leadtimes must be taken into account. As solicitations should not be issued to industry prior to approval of the updated contracting plan, the update should be submitted well in advance of the executive Milestone. This will ensure that contracts can be executed in a timely fashion once executive approval is obtained.¹⁶

By virtue of its early issuance, the contracting plan should be one of the first planning documents to be updated in preparation for transition to the next cycle phase. It should, therefore, serve as an avenue for identifying areas which will have to be updated in other planning documents.

5. Methodology.

It can be seen that the requirements to update both acquisition and contract planning documents revolve around the executive review Milestones. This provides a ready avenue for coordinating all of these updates.

It is felt that the concepts reflected in the acquisition strategy should first be reviewed to ensure that they are still valid. This will serve as a baseline for gauging the extent of updating which will be required for the plans themselves. Once the areas which must be updated are identified, they should be analyzed to determine their interrelationships with each other and with other planning parameters. This will ensure

¹⁶

One PM's planning charts reflected a fifteen-month leadtime for initiation of his contracting plan update.

that any tangential impacts are identified and that all planning parameters are updated in a systematic manner. Having gone through this process, actual planning documents can be updated accordingly.

6. Revisions.

As noted in the introductory paragraph of this section, revisions are necessitated by unanticipated developments and disruptions. The key word here is "unanticipated." While minimizing disruptions should be a goal of any major system acquisition, some PM's exist in an environment of almost constant change. As disruptions are by their nature beyond the PM's control, they place him in a reactive mode of operation. The ability to react in an effective manner is a function of the PM's contingency planning capability. This capability is an absolute necessity for an effective project management effort.

In closing, it should be emphasized that revisions should be accomplished in the same systematic manner as updates. In view of the need to react quickly to disruptions, there may be a temptation to neglect the impact of these disruptions on other planning parameters. An integrated approach to revising planning documents should be emphasized in order to insure full recognition of the impact of the change on the total development effort.

CHAPTER IV

CONCLUSIONS AND RECOMMENDATIONS

A. INTRODUCTION.

Succeeding sections of this chapter set forth conclusions drawn from this research and recommendations for improvement of the Army's acquisition planning system. The conclusions are both general and specific. Likewise, the recommendations are aimed at improving both the overall system and specific aspects of each planning process discussed in Chapter III of the report. To provide for ease of cross referencing, these two sections are presented in parallel, beginning with the general and moving to the specific.

B. CONCLUSIONS.

1. General Conclusions.

The present Army acquisition planning system is in need of improvement. It is admittedly difficult to empirically validate the effectiveness or ineffectiveness of any planning system. This is largely due to the lengthy time lapse between the generation of plans and the demonstration of their results. The difficulty is compounded by the absence of measurable output criteria for gauging these results. In the case of major system acquisitions, the issue becomes even more clouded in attempting to accommodate the impact of disruptive influences on the planning process. Nevertheless, it is possible to identify areas of the current system which are not in accord with general planning principles and/or top level Government policies. These areas involve both efficiency and effectiveness in acquisition planning.

With regard to efficiency, there is a great deal of redundancy and duplication in current planning requirements. To illustrate, the "acquisition plan" called for by Draft AR 70-1 requires the PM to document his plans for a coordinated test program. This is certainly a valid planning element. However, the "acquisition plan" required by DAR 1-2100 also includes the proposed test and evaluation approach as one of the elements in its illustrative format. In addition, the Integrated Program Summary (IPS) called for by DODI 5000.2 includes test and evaluation as one of its elements. Thus substantially the same information must be restated in three separate planning documents, the first being for the PM's internal use, the second for contractual review, and the third for executive review. The same is true of logistics and facilities planning. Additionally, the IPS and DAR requirements duplicate coverage of such areas as reliability and maintainability, life cycle costing, design-to-cost objectives, and management information requirements. In order to remedy this situation, the Army should attempt to standardize formats and to use selected core documents for more than one purpose. This would avoid duplication of efforts and free PM resources to devote more time to the development effort itself.

The effectiveness of the Army's planning system suffers from a marked absence of guidance on acquisition strategy development. This problem is most pronounced in the area of overall acquisition planning, and considerable attention is given to its consequences under Specific Conclusions below. It is mentioned here due to the fact that the lack of a central strategic baseline can adversely affect the development and coordination of individual implementation plans throughout the cycle. It is felt that additional emphasis on acquisition strategy development would go far toward

improving the integration of all related plans.

The preceding discussion encompasses the two major concerns with the overall subject of acquisition planning. The paragraphs which follow address problems with the acquisition process as a whole. While not strictly related to planning, they nonetheless affect the Army's ability to plan its major system acquisitions in an effective and efficient manner.

First, the major system acquisition process is so complex that it is extremely difficult to conceptualize the interrelationships and interactions of all of its various facets. While there is a good deal of material on selected aspects of the acquisition cycle, there is comparatively little literature on the overall system. As a result, individuals who participate in one functional area may not appreciate the impact which their actions may have on the total development. To remedy this situation, more attention should be given to educating functional specialists on the overall systems acquisition process. This would ensure system level perspective and, thereby, improve the coordination of individual contributions to the development effort.

Second, a very real problem facing the acquisition community is the absence of a commonly accepted set of definitions and conventions for the use of certain key terms and phrases. Given all of the varied participants in the acquisition process, open communication is essential. In order to improve communication and avoid misunderstanding, it is felt that the Army should adopt common conventions for internal usage and take the lead in advocating their acceptance by the other services.

2. Specific Conclusions.

The following paragraphs present conclusions which apply to the four major acquisition planning processes. In the case of acquisition and contract planning, they largely parallel the statements set forth in Chapter III regarding the manner in which the Army's system might be improved. They are reiterated here to refresh the reader's memory and to set the stage for the recommendations which follow.

With regard to its basic acquisition planning, the Army places too little emphasis on the development of a comprehensive acquisition strategy at the outset of the cycle. Its current implementing regulations concentrate on the formulation of definitive acquisition plans subsequent to the concept exploration phase. In the absence of central guidance on acquisition strategy development, PM's are left to their own devices in this area. As a result, strategic planning can vary in both quality and content. If a comprehensive strategy is not developed, there is no assurance that all planning parameters will be properly integrated. This, in turn, can lead to functional discord in later phases of the acquisition cycle. In short, there is currently a strategic planning void during the inceptive phases of the cycle which can have a far reaching impact. This void becomes all the more apparent when considered in light of the fact that the PM is not normally appointed until executive approval has been secured at Milestone I. In a closely related area there is as yet no effective repository for lessons learned from other acquisitions to aid the PM in selecting among alternative strategies.

Turning to the executive approval process, preparing for a Milestone review is a difficult and time-consuming task in its own right. In addition,

executive review Milestones serve to trigger the preparation or updating of other planning documents. To illustrate, during the eighteen months preceding a Milestone decision the PM must (1) generate all of the documentation attendant to executive review at two levels; (2) prepare or update his acquisition plan pursuant to Draft AR 70-1; and (3) prepare or update his contracting plan to satisfy the requirements of DAR 1-2100. Taken as a whole, this is an extremely complex undertaking which necessarily diverts resources from the actual development effort. Relieving the PM of some of his executive approval planning burden would allow for devoting more of his time to management of the acquisition itself.

In the area of fiscal approval planning, it has been concluded that the requirements of the PPBS often impede the orderly development of a new major system. This is most pronounced at the inception of the acquisition cycle due to the fourteen to twenty-four month leadtime required to obtain initial funding. However, the prioritization and approval processes of the PPBS are time-paced and demand a long range planning horizon. Its requirements are difficult to accommodate in the acquisition cycle which is event-paced and demands the flexibility to respond quickly to changed conditions. All of the incompatibilities between the two processes cannot be reconciled short of a major revision of the PPBS. However, better understanding of the PPBS can aid in accommodating its requirements in acquisition planning.

Finally, paralleling the lack of attention to overall acquisition planning at the outset, there is too little emphasis on contract planning during the early phases of the acquisition cycle. Despite the fact that contracting plays an important role in both the concept exploration and demonstration and validation phases, no formal contracting plan is required

prior to entry into full scale engineering development--the third phase of the cycle. In addition, there are no review requirements above the local level before the system is ready to enter the production and deployment phase. The current review thresholds are also unrealistically low and do not adequately differentiate between major and nonmajor systems. Finally, contract planning as currently conducted is a prime example of the duplication of efforts alluded to in Section B.1, above. A new approach to contract planning is needed to (1) emphasize early, strategy-level planning; (2) reorient review processes to earlier phases of the acquisition cycle; (3) concentrate these reviews on truly major systems; and (4) eliminate planning redundancy. Such actions would assure contracting its proper place in the overall planning effort.

C. RECOMMENDATIONS.

This section is constructed in the same manner as Section B, above, in that it includes both general and specific recommendations for improvement of the Army's acquisition planning system. The primary distinction between general and specific recommendations is that implementation procedures are suggested for each of the specific recommendations. The section concludes with selected recommendations for further study in the subject area.

1. General Recommendations.

a. To improve the Army's planning efficiency, it is recommended that broader use be made of the Integrated Program Summary (IPS) to provide background information in support of various functional reviews. Current procedures call for presenting essentially the same information, in different formats, to separate reviewing authorities. Using the IPS to provide much of the background and status information for each review

would have two primary advantages. First, it would relieve the PM of having to separately document his planning parameters for each management review process. Second, it would ensure that each reviewing authority relies on the same information. A specific approach for using the IPS to support contracting plans is set forth below. It is felt that other uses could be made of this document in providing information on the overall status and direction of the development effort.

b. To improve the effectiveness of the Army's planning system, more attention should be given to educating functional personnel in the requirements of the overall acquisition cycle. This would raise the conceptual level of key participants in their planning process. By extension, it should increase their appreciation of the need to reconcile their requirements with those of other functional elements. A broader perspective by all participants would improve integration and coordination of the total planning effort. It is recommended that Chapter II of this report be used as a vehicle for this educational process. By virtue of its orientation toward generic management concepts, it avoids becoming enmeshed in the details of any one aspect of the acquisition process. As presently constructed, it is somewhat tailored for contracting personnel. However, its basic content could be readily adapted to accent other functional areas.

c. To alleviate the confusion which currently exists with regard to terminology, it is recommended that the Army sponsor a set of definitions and conventions for Government-wide application. The definitional analysis set forth in Chapter I of this report is recommended as the basis for such an initiative. In this manner, the Army could provide a real service--not only to itself, but to the acquisition community as a whole.

2. Specific Recommendations.

a. To fully comply with top level policies and to substantively improve its planning capabilities, it is recommended that the Army adopt the following approach to acquisition strategy development.

As the Army's primary materiel developer, DARCOM should utilize its available expertise to guide the formulation of acquisition strategies for major systems under its cognizance. It is felt that the best approach for effecting this improvement would be to charter an Acquisition Strategy Panel (ASP) at the DARCOM level. A relatively small group of high level functional managers is envisioned as the standing membership of the ASP. This formal group would then be able to draw on other functional experts within DARCOM on an ad hoc basis. Figure 9 displays the proposed standing membership for the ASP. Under this organizational concept, the Deputy Commanding General for Materiel Development would chair the ASP and have final approval over acquisition strategies. The Director for Development and Engineering would have cognizance over the technical aspects of the strategy. The Comptroller would be responsible for cost and budgetary matters. The Director of Procurement and Production would be primarily concerned with the business approach to be employed throughout the acquisition cycle. This is considered to represent a logical and efficient organization for the ASP; its adoption would have the benefit of complementing the DARCOM Program/Cost Control System which is currently under development. In addition to these DARCOM managers, the PM should be an active participant. The PM should also have the latitude to request that functional experts from the cognizant development command be invited to participate in the ASP's deliberations.

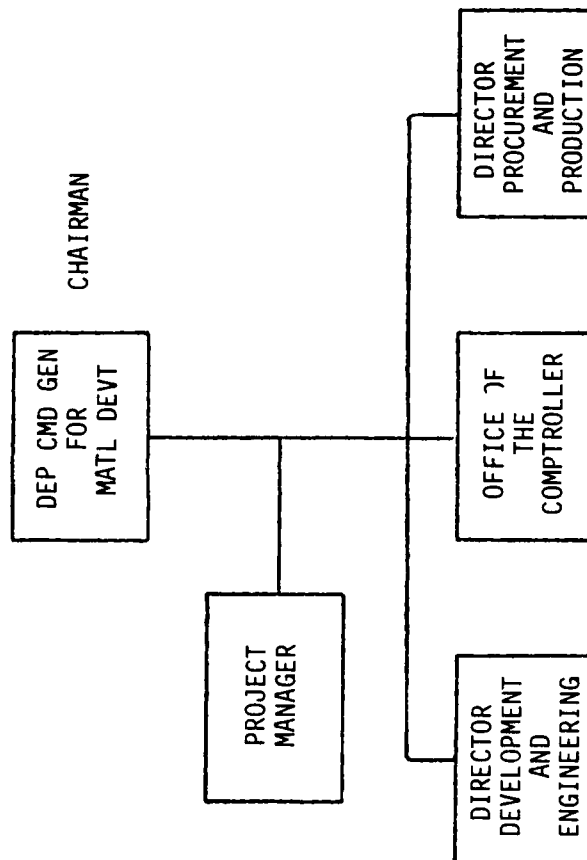


FIGURE 9. ACQUISITION STRATEGY PANEL

It is recommended that the ASP not concern itself with every system under DARCOM cognizance, but rather concentrate its efforts on the most critical programs. In determining whether the ASP should contribute to the formulation of an acquisition strategy for a given system, the primary criteria should be the executive approval level. That is, if the Secretary of Defense has designated the system as major and retained executive approval authority at his level, convening the ASP should be automatic. If the system is nonmajor, but executive approval is at the DA level, use of the ASP should be discretionary. For nonmajor systems which reserve executive approval authority to the local command, no DARCOM ASP participation is recommended. This approach would ensure that DARCOM resources are applied to those acquisitions which are most critical to its overall mission.

With regard to ASP methodology, an optional approach is recommended. Under the first option, the ASP would actively assist the PM in formulating his acquisition strategy. Alternatively, the PM would develop the acquisition strategy himself and submit it to the ASP for review. Choosing between these approaches should be left largely to the discretion of the PM, based on the level of resources he has at his disposal. However, it should also be the ASP Chairman's prerogative to select systems for active participation. Several criteria should be applied in making this determination. First, the level of executive approval authority should again be considered. Second, the urgency of the mission need should be a contributing factor. Third, the magnitude of the attendant resource estimate should be examined. Finally, the degree of subsystem and intercommand dependencies should be analyzed. Any or all of these factors may lead the Chairman or the PM to decide that active ASP participation will be beneficial.

Regardless of which approach is chosen, the following actions should be taken in the initial strategic planning phase. First, a broad conceptual framework should be established to guide the total development effort. This would constitute the acquisition strategy, per se. In order to select the strategy which is best suited to the situation at hand, a systematic method should be employed. This would include (1) prioritizing objectives; (2) identifying relevant conditions and constraints; and (3) analyzing areas of significant risk.¹⁷ Given these parameters, alternative strategic concepts can be considered in a logical manner. Having developed the basic strategy to be applied to the acquisition, the PM and the ASP should then establish goals and thresholds for each major aspect of the development effort. In this regard, the Integrated Program Summary (IPS) is again endorsed as a baseline document. Elements reflected in the IPS are of interest to executive review authorities and will be monitored throughout the acquisition cycle. They are also the most comprehensive listing reflected in any major planning document. In view of these factors, the IPS is considered to contain an excellent checklist for strategic planning purposes. Table 2 reflects each element of the IPS in its left hand column. The right hand column of the Table sets forth the various DARCOM functional elements which might contribute to the establishment of goals and thresholds for each IPS element. Along with goals and thresholds, a schedule should be established for generating definitive implementation plans for each IPS element. Finally, the PM and the ASP should agree on

¹⁷

APRO 806-1, "Relating Acquisition and Contract Planning."

TABLE 2
ASP CONTRIBUTORS

IPS ELEMENT	ASP PROPONENT
Program History	Not Applicable
Program Alternatives	Project Manager Dir. for Development and Engineering
Cost Effectiveness Analysis	Ofc of the Comptroller
Threat Assessment	Dir. for Development and Engineering
System Vulnerability	Dir. for Development and Engineering
Organizational and Operational Concept	Dir. for Development and Engineering
Overview of Acquisition Strategy	Project Manager Acquisition Strategy Panel
Technology Assessment	Dir. for Development and Engineering
Contracting	Dir. for Procurement and Production
Manufacturing and Production	Ofc of Manufacturing Technology Dir. for Readiness
Data Management	Dir. for Development and Engineering Dir. for Procurement and Production

TABLE 2
(CONTINUED)

IPS ELEMENT	ASP PROPONENT
Configuration Management	Dir. for Development and Engineering
Test and Evaluation	Dir. for Development and Engineering
Cost: Life-Cycle Cost	Dir. for Procurement and Production Dir. for Readiness
Cost Control	Dir. for Procurement and Production
Production	Dir. for Procurement and Production Ofc of Manufacturing Technology
Programing and Budgeting	Dir. for Development and Engineering Ofc of the Comptroller Dir. for Plans and Analysis
Logistics	Dir. for Readiness
Reliability and Maintainability	Dir. for Product Assurance
Quality	Dir. for Product Assurance
Manpower	Dir. for Readiness
Training	Dir. for Readiness
Facilities	Dir. for Readiness Ofc of Manufacturing Technology

TABLE 2
(CONTINUED)

IPS ELEMENT	ASP PROPONENT
Energy, Environment, Health and Safety	Dir. for Installations and Services
Computer Resources	Dir. for Management Information Systems
International Programs	Ofc of International Research and Development

AD-A097 868

ARMY PROCUREMENT RESEARCH OFFICE FORT LEE VA

F/G 15/5

ACQUISITION STRATEGY DEVELOPMENT.(U)

FEB 81 D O KNITTLE, R F WILLIAMS

UNCLASSIFIED

APRO-904

*2

ADP 700-4

END

DATE

FILED

5 81

DTIC

definitive plans for conducting the exploration of alternative system concepts during the first phase of the acquisition cycle.

In order to accomplish the above actions, the ASP should be convened as soon as possible after executive approval is secured at Milestone 0. This would ensure that strategic planning is carried out in a disciplined, systematic manner at a time when all options remain open. It would also provide an avenue for utilizing the fourteen to twenty-four month PPBS leadtime to better advantage. Finally, it would provide needed support to the PM at a time when his office has not been extensively staffed. The panel could then reconvene during later phases of the cycle if the situation warrants. It is envisioned that this would occur only if significant planning thresholds are breached. However, calling for subsequent ASP action should be the prerogative of either the PM or the ASP Chairman.

Utilizing the approach outlined above would provide several benefits. First and foremost, it would substantively improve the Army's strategic planning capabilities by injecting more discipline into the early phases of the process. It would also serve to bring the Army into closer compliance with top level policies. Beyond this, it would provide an opportunity to gain advocacy and consensus with regard to the approaches to be employed. By obtaining consensus at the outset, future challenges by individual functional elements would be avoided. Gathering all affected functional elements into one forum would encourage open discussion and resolution of potentially discordant objectives. Any disagreements could be elevated to the Chairman for a decision. Thus, planning parameters would be better orchestrated and integrated. Convening the panel at the outset would also enable DARCOM to make constructive use of the PPBS

leadtime, and establishing the ASP at the DARCOM level would provide an opportunity to consider lessons learned at all Development Commands. Finally, this approach would provide the intangible benefit of increasing awareness of the evolving program's objectives and direction.

It should be noted at this point that many of the benefits attributed to the ASP could be achieved by alternative means (i.e., by having the PM submit his proposed strategy for conventional staffing). However, in the absence of an ASP the benefits of open discussion, discordance resolution, and functional integration would suffer. The central point is that while the ASP concept is strongly endorsed, the benefits attendant to establishing an acquisition strategy early in the life cycle should be pursued, regardless of the methodology which is ultimately selected.

In order to implement this approach, several actions would be necessary. First, Draft AR 70-1 should be modified to provide greater coverage to the development of acquisition strategies and to differentiate between such strategies and their implementing plans. Second, the "DARCOM/TRADOC Materiel Acquisition Handbook" should be revised to more clearly establish the role of DARCOM in strategy development. Finally, the ASP would have to be formally chartered at DARCOM. Beyond such regulatory initiatives, there should be no necessary actions other than identifying candidate systems for applying these procedures.

As a final point, it is recommended that the ASP concept also be utilized for nonmajor systems at the individual Development Commands. While planning activities for nonmajor systems may not be as extensive,

the same systematic multi-disciplinary approach would benefit any development effort.

b. To support the recommendations outlined above, it is recommended that the Army adopt a policy of appointing a PM as soon as possible after Milestone 0. The PM designee's initial duties should then center around the development of his acquisition strategy. This would ensure that one individual is tasked with serving as the focal point for the overall planning effort. It would have the ancillary benefit of fully complying with top level policy guidance.

Implementation of this recommendation would require a revision to AR 1000-1 and corresponding modifications to its various implementing regulations.

c. To assist the PM in his executive approval planning, it is recommended that a computer program be utilized to identify and display critical actions which must be accomplished in preparation for a Milestone review. During the field interview phase of this research, it was discovered that such a program is already being developed within the HELLFIRE project office. This program displays seventy-two tasks which must be accomplished throughout the executive approval process. For each entry, the printout includes the suspense date for completion; the forecast date for completion; the primary staff element for that actions; the coordination which must be accomplished; and comments which describe the action and reference the user to its source regulations. This is considered to be an excellent tool for all PM's and its adoption for use throughout DARCOM is recommended. Unfortunately, at this writing all software has not been developed to a stage which would allow for transfer to other offices. However, this should be

accomplished in the near future. Contact should be made with the HELLFIRE project office to arrange for a demonstration of the program's capabilities as soon as it is fully mature.

d. To provide for better coordination of acquisition and fiscal approval planning, it is recommended that the insights provided by Section D of Chapter III be widely disseminated throughout DARCOM. Better accommodation of PPBS requirements in acquisition planning would have the benefit of shortening the acquisition cycle by reducing funding leadtimes at the outset. It would also serve to smooth the transition from one cycle phase to the next. Educating personnel in the requirements of the PPBS is the first step in this accommodation process. Figures 7 and 8 are considered to provide an excellent vehicle for such educational efforts.

e. To improve the quality of contract planning, it is recommended that additional emphasis be placed on strategic planning at the outset of the acquisition cycle. A contracting strategy should first be developed which encompasses the entire development effort. This action should be taken as soon as possible after Milestone 0, paralleling the formulation of the overall acquisition strategy. Implementation plans should then be developed for each cycle phase. That is, a definitive plan for the concept exploration phase should be generated in conjunction with the contract strategy. Plans for subsequent phases should be generated sufficiently in advance of the Milestone decision point to accommodate contracting leadtimes. Each plan should concentrate on the cycle phase at hand, while giving due consideration to the implications of that plan for future phases. By adopting this approach the Army would (1) improve the continuity of contract planning by establishing a strategic baseline for subsequent

actions; (2) instill greater discipline in early contract planning; and (3) bring its practices into line with the intent of the Defense Acquisition Regulation (DAR).

Implementation of this recommendation would require a revision to Draft AR 70-1 to provide for the generation of contracting plans prior to the full scale engineering development phase.

f. To provide a focal point for early contract planning, it is recommended that a policy be adopted of assigning a contracting officer to each major system acquisition as soon as possible after Milestone 0. While the contracting officer may not be dedicated to the acquisition at this time, his early appointment would ensure that contractual actions are given adequate consideration within the overall planning process.

This recommendation could be implemented at the individual commands. However, it is recommended that DARCOM issue a formal policy statement in this regard.

g. To parallel the revised emphasis on early contract planning, the ADARS should also be revised to reorient its review and approval requirements toward the earlier phases of the acquisition cycle. As emphasized throughout this report, it is at the outset of a system's development that the contracting officer has the greatest planning latitude. At that time he must make judgmental decisions that can have far reaching impacts on the development effort. It is felt that this is precisely the time when a check and balance system should be applied in the form of higher headquarters review. As the system matures through the production and deployment phase, contractual options become more constrained. At a given point in time, a system may approach the goal of formally advertised

placement of fixed price contracts. While this goal may be optimistic, it illustrates the point that contractual actions should become less controversial as the system matures. At this stage high level reviews become less meaningful. However, at the inception of the development cycle, such reviews can have a substantive impact on shaping the direction which the contracting strategy should take.

Implementation of this recommendation would require an amendment to the ADARS. No other regulatory action would be necessary.

h. To better differentiate between major and nonmajor systems, it is recommended that current higher headquarters review thresholds be revised. It is further recommended that this revision take the form of tying the contracting plan approval level to that of the source selection authority. It is noted that neither OMB A-109, DODD 5000.1, nor DODI 5000.2 prescribe specific dollar thresholds for designating a system as major. It is felt that this is prudent in view of the potential obsolescence built in to any arbitrary dollar threshold. By utilizing the source selection level as the determinant for review requirements, the Army would concentrate its efforts on major systems. It would also retain the flexibility to accommodate the impact of inflation on its review requirements.

Implementation of this recommendation would again require a revision to the ADARS. It is recommended that this revision be accomplished in conjunction with that called by by g., above.

i. To improve the efficiency of contract planning within the Army, it is recommended that revised content requirements be established. This proposal contemplates utilization of the IPS to provide essential background material to review authorities, and thereby allow for a reduction in

the content of the "acquisition plan" required by DAR 1-2100. To illustrate, Figure 10 displays the elements of the IPS in its left hand column. The figure's right hand column reflects elements of the current DAR illustrative "acquisition plan" format which could be eliminated if the IPS were used to supply this information. For ease of reference, arrows have been inserted to connect the corresponding elements in each column. The residual elements from the DAR's illustrative format provided the basic content for the recommended contracting plan. These elements were then supplemented by certain other planning factors which were considered important by the researchers. The revised coverage recommended by this report is reflected in Table 3.

Adopting this approach would have two primary benefits. First, it would relieve the contracting officer of having to restate information already contained in the IPS. This would allow more time for addressing matters which are central to the contracting process itself. Second, Figure 11 illustrates the fact that use of the IPS would provide even more background information to reviewing authorities than is currently included in the DAR format.

Implementation of this recommendation would require a revision to the ADARS. In view of the latitude provided by the DAR with regard to contract planning, no revision to that regulation would be necessary. However, this approach is considered to have such merit that it is suggested the Army take the initiative in sponsoring a DAR revision in this area.

j. To ensure that the recommendations of this study are given full consideration within DARCOM, it is recommended that an action officer

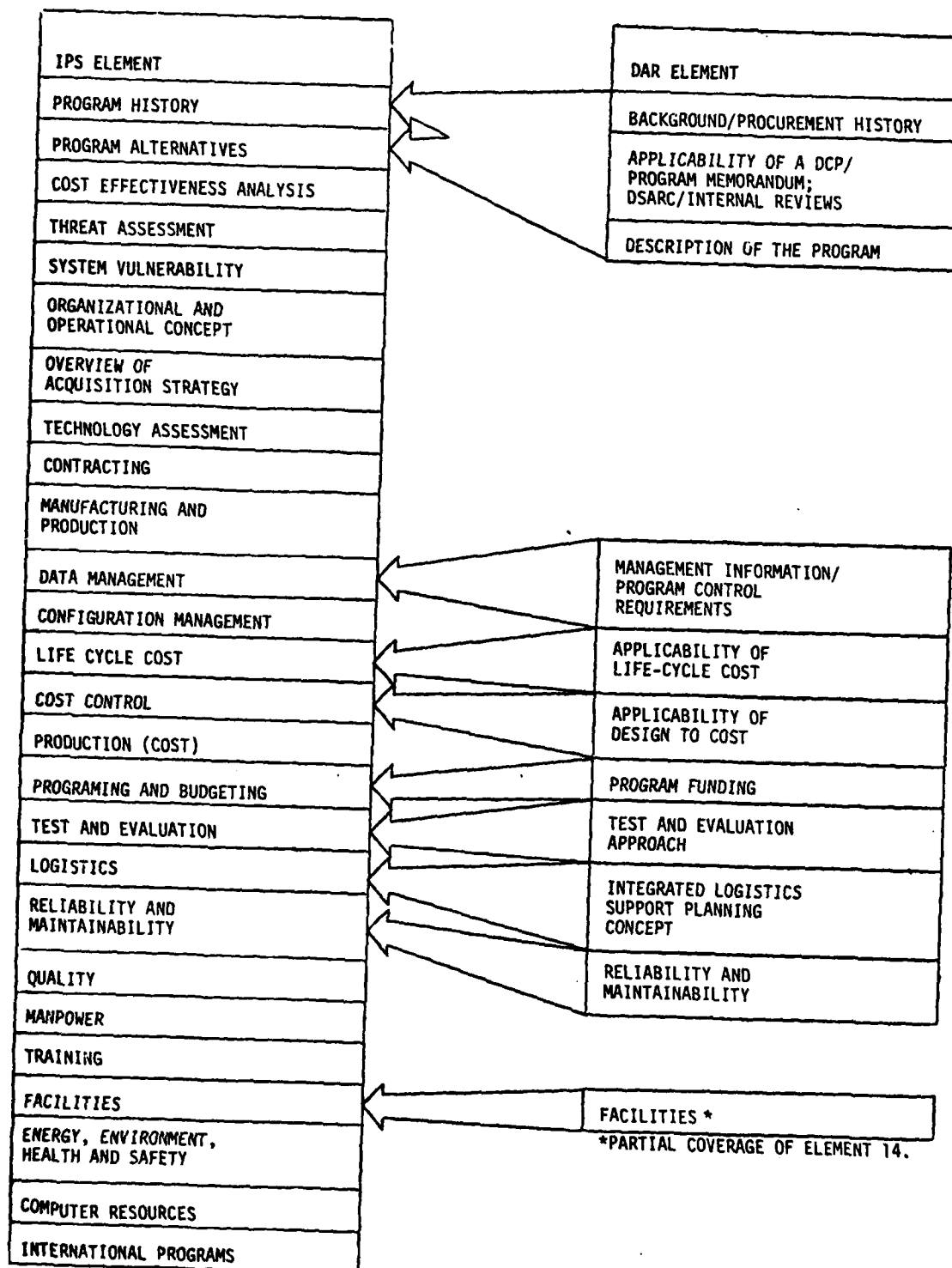


FIGURE 10. INTEGRATED PROGRAM SUMMARY AS COMPARED TO DAR 1-2100

TABLE 3

RECOMMENDED CONTRACTING PLAN COVERAGE

- I. DISCUSSION OF CONTRACTING STRATEGY
 - A. METHODS FOR OBTAINING/SUSTAINING COMPETITION
 - 1. End Item Competition
 - 2. Component Breakout
 - B. CONTRACTUAL INTERDEPENDENCIES
 - 1. High Risk Items
 - 2. Contingency Plans
 - C. ALTERNATIVE APPROACHES CONSIDERED
- II. CONTRACTING PLANS FOR INDIVIDUAL CONTRACTS
 - A. ITEM DESCRIPTION
 - B. ESTIMATED COST
 - C. PROPOSED SOURCE(S) AND BASIS FOR SELECTION
 - D. SOURCE SELECTION PROCEDURES
 - E. CONTRACT TYPE
 - F. NEGOTIATION AUTHORITY RECOMMENDED
 - G. REPROCUREMENT DATA
 - H. DELIVERY REQUIREMENTS
 - I. GOVERNMENT FURNISHED MATERIAL
 - J. RISK DISCUSSION (TECHNICAL, COST, SCHEDULE)
 - K. MILESTONES FOR THE CONTRACTING CYCLE
 - 1. Contracting Plan Approval
 - 2. D&F Approval
 - 3. Completion of Contract Package

be appointed to monitor their progress. Taken as a whole, these recommendations would affect many diverse functional elements. A focal point is needed to coordinate the review and implementation of these improvements throughout the command.

3. Recommendations For Further Study.

During the course of this research, two areas suggested themselves for further study. The first deals with improving the interface between contract planning and the PPBS. The second concerns coordinating contract planning with the executive approval process.

a. As noted in Section D.2 of Chapter III, this study's analysis of the PPBS concentrated on the flow of program and budget submissions from the individual development commands, through the various review levels, and ultimately to Congress. It gave little attention to the flow of guidance from the top downward which establishes the framework for these submissions. However, such guidance does filter down at various intervals in the PPBS cycle. It is felt that a methodology could be developed to ensure that this information is ultimately passed on to the contracting officer to aid in his early planning efforts. While early information would only be a rough measure of the contracting officer's long range workload, it could nonetheless be valuable for planning purposes. Further, as budgetary submissions are refined, the contracting officer's planning information could likewise be refined. By the time the President's budget is submitted to Congress, contract planners would have fairly definitive information at their disposal--eight months in advance of the upcoming fiscal year. This is considered to be a prime area for improvement of contract planning, and further investigation is strongly endorsed.

b. The computer program discussed under recommendation C.2.c., above, currently includes only those actions necessary to prepare for an executive Milestone. However, it has been noted that many contractual actions are also paced by these Milestone reviews. It should be possible to expand the basic program to incorporate necessary contractual actions. The "Milestones for the Contracting Cycle" reflected in Table 2, for example, could be readily adopted to a computerized format. This action would substantially enhance the program's usefulness and provide a visible linkage between executive approval and contract planning. While this should not be a difficult task, it would require further study at the time that the program's software is fully mature.

SELECTED BIBLIOGRAPHY

Government Documents

US Army. Army Regulation 1-1: Planning, Programing and Budgeting within the Department of the Army. Washington, DC, 1976.

US Army. Army Regulation 15-14: Systems Acquisition Review Council Procedures. Washington, DC, 1978.

US Army. Draft Army Regulation 70-1: Army Research, Development and Acquisition. Washington, DC, 1975.

US Army. Army Regulation 70-6, Department of the Army Research, Development, Test and Evaluation Appropriation. Washington, DC, 1974.

US Army. Final Draft Army Regulation 71-9: Materiel Objectives and Requirements. Washington, DC, 1979.

US Army. Army Regulation 1000-1: Basic Policies for Systems Acquisition. Washington, DC, 1978.

US Army. Army Defense Acquisition Regulation Supplement. Washington, DC, 1976.

US Army. Planning, Programing, and Budgeting System (PPBS) Handbook. Washington, DC, 1979.

US Army Materiel Development and Readiness Command and US Army Training and Doctrine Command. DARCOM-TRADOC Materiel Acquisition Handbook. Alexandria, VA, 1980.

US Army Materiel Development and Readiness Command. DARCOM Regulation No. 1-34: Review and Command Assessment of Projects (RECAP) for Development-Oriented PM's; Department of the Army Program Review (DAPR); Review and Command Assessment of Projects (RECAP) for Readiness-Oriented PM's. Alexandria, VA, 1977.

US Army Materiel Development and Readiness Command. DARCOM Regulation No. 1-41: Logistics Command Assessment of Projects (LOGCAP). Alexandria, VA, 1978.

US Army Materiel Development and Readiness Command. DARCOM Regulation No. 10-2: Headquarters, DARCOM, Organization, Mission, and Functions Manual. Alexandria, VA, 1980.

US Army Materiel Development and Readiness Command. Materiel Acquisition Management Guide. Alexandria, VA, 1980.

US Congress. Report of the Commission on Government Procurement, Vols. 1 and 2. Washington, DC, 1972.

US Department of Defense. Department of Defense Directive 5000.1: Major System Acquisitions. Washington, DC, 1980.

US Department of Defense. Department of Defense Instruction 5000-2: Major System Acquisition Procedures. Washington, DC, 1980.

US Department of Defense. Department of Defense Directive 5000.35: Defense Acquisition Regulatory System. Washington, DC, 1978.

US Department of Defense. Defense Acquisition Regulation. Washington, DC, 1976.

US Office of Federal Procurement Policy. Pamphlet No. 1: Major System Acquisitions: A Discussion of the Application of OMB Circular No. A-109. Washington, DC, 1976

US Office of Management and Budget. Circular No. A-109: Major System Acquisitions. Washington, DC, 1976.

Books

Fox, J. Ronald. Arming America: How the US Buys Weapons. Boston: Harvard University Press, 1975.

Sherman, Stanley N. Procurement Management: The Federal System. Bethesda, MD: S.L. Communications, 1979.

Articles

Fargher, John S. W., Jr. "The Decision Coordinating Paper/Defense Systems Acquisition Review Council Process." Program Manager (September-October, 1979), pp. 3-6.

Gordon, Harvey J. "The Role of the Contract in Systems Acquisition." Defense Systems Management Review (Winter, 1980), pp. 30-42.

Roberts, Dean E. "OMB Circular A-109 Impact on New Developments." Defense Systems Management Review (Autumn, 1979), pp. 27-35.

Spencer, David T. "Alternatives for Shortening the Acquisition Process." Defense Systems Management Review (Autumn, 1979), pp. 36-59.

Unpublished Materials

US Army Procurement Research Office. "Report 806-1: Relating Acquisition and Contract Planning." US Army Logistics Management Center, Fort Lee, VA, 1979.

Johnson, Alex J. "Reflections on being a Department of the Army System Coordinator (DASC)." Study Project Paper, Defense Systems Management College, Fort Belvoir, VA, 1977.

STUDY TEAM COMPOSITION

Duane D. Knittle, Procurement Analyst, US Army Procurement Research Office, US Army Logistics Management Center, Fort Lee, Virginia; B.A. in Political Science, 1969, Central Missouri State University; M.S.A. in Procurement and Contracting, 1977, The George Washington University. Prior to joining the Procurement Research Office, Mr. Knittle served as an Administrative Contracting Officer for the Defense Contract Administration Services. Mr. Knittle has also served as a contract specialist for the US Army Munitions Command and as a procurement analyst (trainee) with the US Army Missile Command.

Robert F. Williams, Chief, Test and Evaluation Group, US Army Procurement Research Office, US Army Logistics Management Center, Fort Lee, Virginia; B.S. in Aeronautical Engineering, 1963, University of Wyoming; Master of Commerce in OR/Marketing, 1972, University of Richmond. Prior to joining the Procurement Research Office, Mr. Williams was an aero-systems engineer for six years with the Air Force. Mr. Williams is currently a doctoral candidate in marketing at the University of Alabama.

UNCLASSIFIED

Security Classification

DOCUMENT CONTROL DATA - R & D

AD-A097868

(Security classification of title, body of abstract and indexing annotation must be entered when the overall report is classified)

1. ORIGINATING ACTIVITY (Corporate author) US Army Procurement Research Office US Army Logistics Management Center Fort Lee, VA 23801		2a. REPORT SECURITY CLASSIFICATION UNCLASSIFIED	
3. REPORT TITLE Acquisition Strategy Development APRO 904		2b. GROUP Distribution Unlimited	
4. DESCRIPTIVE NOTES (Type of report and inclusive dates) Final			
5. AUTHOR(S) (First name, middle initial, last name) Duane D. Knittle, Robert F. Williams			
6. REPORT DATE February 1981	7a. TOTAL NO. OF PAGES 111	7b. NO. OF REFS 28	
8a. CONTRACT OR GRANT NO.	8b. ORIGINATOR'S REPORT NUMBER(S) APRO 904 ✓		
8c. PROJECT NO.	8d. OTHER REPORT NO(S) (Any other numbers that may be assigned this report)		
8e.			
8f.			
10. DISTRIBUTION STATEMENT Distribution of this document is unlimited.			
11. SUPPLEMENTARY NOTES		12. SPONSORING MILITARY ACTIVITY US Army Materiel Development and Readiness Command, 5001 Eisenhower Ave. Alexandria, VA 22333	
13. ABSTRACT Top level policies task the project manager (PM) with formulating a comprehensive acquisition strategy at the outset of the development cycle to guide the system's evolution. However, current Army regulations provide little guidance to PM's for developing their acquisition strategies . The objectives of this study were to (1) develop definitions for key terms; (2) describe the major system acquisition process in an understandable manner; (3) examine the overall planning requirements for system acquisitions; (4) recommend improvements for the Army's major system acquisition planning system; and (5) determine the applicability of these improvements for nonmajor systems. The methodology employed to achieve these objectives included: (1) review of current regulations and literature on acquisition planning; (2) interviews with cognizant personnel at various levels within the Army, as well as other service representatives; (3) review of various planning documents prepared for current major system acquisitions within the Army. The conclusions drawn from this research included: (1) current Army policies place too little emphasis on early strategic planning; (2) this results in a lack of discipline and uniformity in acquisition strategy development; (3) PM's need more assistance in			

DD FORM 1473

REPLACES DD FORM 1473, 1 JAN 64, WHEN IS OBSOLETE FOR ARMY USE.

103

UNCLASSIFIED

Security Classification

13. Abstract (continued)

developing acquisition strategies; and (4) contracting has not been given proper emphasis in early acquisition planning.

Recommendations include initiating action to (1) appoint PM's at the outset of the acquisition cycle; (2) provide PM's with more guidance on strategy development, based on content of this report; (3) establish an Acquisition Strategy Panel at DARCOM to assist PM's in strategic planning; (4) place more emphasis on early contract planning; (5) concentrate contract planning on core issues; and (6) incorporate selected portions of this report into Army training programs.

DATE
FILMED
8